PART A

IONOSPHERIC DATA

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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
CENTRAL RADIO PROPAGATION LABORATORY
BOULDER, COLORADO

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CONTENTS

SYMBOLS, TERMINOLOGY, CONVENTIONS

Beginning with data reported for January 1952, the symbols, terminology, and conventions for the determination of median values used in this report (CRPL-F series) conform as far as practicable to those adopted at the Sixth Meeting of the International Radio Consultative Committee (C.C.I.R.) in Geneva, 1951. Excerpts concerning symbols and terminology from Document No. 626-E of this Meeting are given on pages 2-7 of the report CRPL-F89, "Ionospheric Data," issued January 1952. Reprints of these pages are available upon request.

Beginning with data for January 1945, median values are published wherever possible. Where averages are reported, they are, at any hour, the average for all the days during the month for which numerical data exist.

The following conventions are used in determining the medians for hours when no measured values are given because of equipment limitations and ionospheric irregularities. Symbols used are those given in Document No. 626-E referred to above, plus an additional symbol, R: "Scaling of characteristic is influenced or prevented by absorption in the neighborhood of the critical frequency," (May 1955). Also, beginning with January 1956, additional meanings are assigned to T: A smoothed value which better fits the observations, replacing a doubtful or clearly inconsistent observed value; and to U: foF2 minus foF1 is 0.5 Mc or less (used with (M3000)F2).

a. For all ionospheric characteristics:

Values missing because of A, C, F, L, M, N, Q, R, S, or T are omitted from the median count.

b. For critical frequencies and virtual heights:

Values of foF2 (and foE near sunrise and sunset) missing because of E are counted as equal to or less than the lower limit of the recorder. Values of h'F2 (and h'E near sunrise and sunset) missing for this reason are counted usually as equal to or greater than the median. Other characteristics missing because of E are omitted from the median count.

Values missing because of G are counted:

1. For foF2, as equal to or less than foF1.
2. For h'F2, as equal to or greater than the median.

The symbol W is included in the median count only when it replaces a height characteristic; the symbol D, only when it replaces a frequency characteristic.

Values missing for any other reason are omitted from the median count.

c. For MUF factor (M-factors):

Values missing because of G or W are counted as equal to or less than the median.

Values missing for any other reason are omitted from the median count.

d. For sporadic E (Es):

Values of fEs missing because of E or G (and B when applied to the daytime E region only) are counted as equal to or less than the median foE, or equal to or less than the lower frequency limit of the recorder.

At night B for fEs is counted on the low side when there is a numerical value of foF2; otherwise it is omitted from the median count.

Values of fEs missing for any other reason, and values of h'Es missing for any reason at all are omitted from the median count.

Beginning with data for November 1945, doubtful monthly median values for ionospheric observations at Washington, D. C., are indicated by parentheses, in accordance with the practice already in use for doubtful hourly values. The following are the conventions used to determine whether or not a median value is doubtful:

1. If only four values or less are available, the data are considered insufficient and no median value is computed.

2. For the F2 layer, if only five to nine values are available, the median is considered doubtful. The E and F1 layers are so regular in their characteristics that, as long as there are at least five values, the median is not considered doubtful.

3. For all layers, if more than half of the values used to compute the median are doubtful (either doubtful or interpolated), the median is considered doubtful.

The same conventions are used by the CRPL in computing the medians from tabulations of daily and hourly data for stations other than Washington, beginning with the tables in IRPL-F18.

The tables and graphs of ionospheric data are correct for the values reported to the CRPL, but, because of variations in practice

in the interpretation of records and scaling and manner of reporting of values, may at times give an erroneous conception of typical ionospheric characteristics at the station. Some of the errors are due to:

a. Differences in scaling records when spread echoes are present.

b. Omission of values when foF2 is less than or equal to foF1, leading to erroneously high values of monthly averages or median values.

c. Omission of values when critical frequencies are less than the lower frequency limit of the recorder, also leading to erroneously high values of monthly average or median values.

These effects were discussed on pages 6 and 7 of the previous F-series report IRPL-F5.

Ordinarily, a blank space in the fEs column of a table is the result of the fact that a majority of the readings for the month are below the lower limit of the recorder or less than the corresponding values of foE. Blank spaces at the beginning and end of columns of h'F1, foF1, h'E, and foE are usually the result of diurnal variation in these characteristics. Complete absence of medians of h'F1 and foF1 is usually the result of seasonal effects.

The dashed-line prediction curves of the graphs of ionospheric data are obtained from the predicted zero-muf contour charts of the CRPL-D series publications. The following points are worthy of note:

a. Predictions for individual stations used to construct the charts may be more accurate than the values read from the charts since some smoothing of the contours is necessary to allow for the longitude effect within a zone. Thus, inasmuch as the predicted contours are for the center of each zone, part of the discrepancy between the predicted and observed values as given in the F series may be caused by the fact that the station is not centrally located within the zone.

b. The final presentation of the predictions is dependent upon the latest available ionospheric and radio propagation data, as well as upon predicted sunspot number.

c. There is no indication on the graphs of the relative reliability of the data; it is necessary to consult the tables for such information.

PREDICTED AND OBSERVED SUNSPOT NUMBERS

The following predicted smoothed 12-month running-average Zürich sunspot numbers were used in constructing the contour charts:

Month	Predicted Sunspot Number										
	1956	1955	1954	1953	1952	1951	1950	1949	1948	1947	1946
December		42	11	15	33	53	86	108	114	126	85
November		35	10	16	38	52	87	112	115	124	83
October	135	31	10	17	43	52	90	114	116	119	81
September	119	30	8	18	46	54	91	115	117	121	79
August	105	27	8	18	49	57	96	111	123	122	77
July	95	22	8	20	51	60	101	108	125	116	73
June	89	18	9	21	52	63	103	108	129	112	67
May	77	16	10	22	52	68	102	108	130	109	67
April	68	13	10	24	52	74	101	109	133	107	62
March	60	14	11	27	52	78	103	111	133	105	51
February	53	14	12	29	51	82	103	113	133	90	46
January	48	12	14	30	53	85	105	112	130	88	42

The latest available information follows concerning the corresponding observed Zürich numbers (some of which may be subject to minor change) beginning with the minimum of April 1954.

Observed Sunspot Number

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1954				3	4	4	5	7	8	8	9	12
1955	14	16	19	23	29	35	40	46	55	64		

WORLD-WIDE SOURCES OF IONOSPHERIC DATA

The ionospheric data given here in tables 1 to 72 and figures 1 to 144 were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL prediction of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data in this issue:

Republica Argentina, Ministerio de Marina:
Buenos Aires, Argentina

Commonwealth of Australia, Ionospheric Prediction Service of the Commonwealth Observatory:
Canberra, Australia
Hobart, Tasmania
Townsville, Australia

University of Graz:
Graz, Austria

Meteorological Service of the Belgian Congo and Ruanda-Urundi:
Elisabethville, Belgian Congo
Leopoldville, Belgian Congo

Defence Research Board, Canada:
Churchill, Canada
Ottawa, Canada
Resolute Bay, Canada
Winnipeg, Canada

Radio Wave Research Laboratories, National Taiwan University, Taipeh, Formosa, China:
Formosa, China

Danish National Committee of URSI:
Godhavn, Greenland

Institute for Ionospheric Research, Lindau Uber Northeim, Hannover, Germany:
Lindau/Harz, Germany

The Royal Netherlands Meteorological Institute:
De Bilt, Holland

Indian Council of Scientific and Industrial Research, Radio Research Committee, New Delhi, India:
Ahmedabad, India (Physical Research Laboratory)
Bombay, India (All India Radio)
Calcutta, India (Institute of Radio Physics and Electronics)
Delhi, India (All India Radio)
Madras, India (All India Radio)
Tiruchy (Tiruchirapalli), India (All India Radio)

Ministry of Postal Services, Radio Research Laboratories, Tokyo, Japan:
Akita, Japan
Tokyo (Kokubunji), Japan
Wakkanai, Japan
Yamagawa, Japan

Christchurch Geophysical Observatory, New Zealand Department of Scientific and Industrial Research:
Campbell I.

Norwegian Defence Research Establishment, Kjeller per Lillestrom, Norway:
Oslo, Norway
Tromso, Norway

South African Council for Scientific and Industrial Research:
Capetown, Union of South Africa
Johannesburg, Union of South Africa
Nairobi, Kenya (East African Meteorological Department)

Research Institute of National Defence, Stockholm, Sweden:
Kiruna, Sweden
Upsala, Sweden

Post, Telephone and Telegraph Administration, Berne, Switzerland:
Schwarzenburg, Switzerland

United States Army Signal Corps:
Adak, Alaska
Ft. Monmouth, New Jersey
Okinawa I.
White Sands, New Mexico

National Bureau of Standards (Central Radio Propagation Laboratory):
Anchorage, Alaska
Fairbanks, Alaska (Geophysical Institute of the University of Alaska)
Guam I.
Huancayo, Peru (Instituto Geofisico de Huancayo)
Maui, Hawaii
Narsarssuak, Greenland
Panama Canal Zone
Puerto Rico, W. I.
San Francisco, California (Stanford University)
Talara, Peru (Instituto Geofisico de Huancayo)
Washington, D. C.

HOURLY IONOSPHERIC DATA AT WASHINGTON, D. C.

The data given in tables 73 through 83 follow the scaling practices given in the report IRPL-C61, "Report of International Radio Propagation Conference," pages 36 to 39, and the median values are determined by the conventions given above under "Symbols, Terminology, Conventions." Beginning with September 1949, the data are taken at Ft. Belvoir, Virginia.

The interpretation of a cell is as follows: U F
32

The U is a weight meaning doubtful. Other weights are I, interpolated, D, greater than, and E, less than. Absence of a letter in the upper left position means full weight is given to the observation.

Symbols such as F above are given in the upper right position.

There should be no difficulty in the placing of the decimal point. For the time being, a final zero will be found in each value of foF1 and foE. Thus at a later date it will be possible to register more closely scaled values of these characteristics, whenever such are reported.

Table 1

Washington, D. C. (30.7°N, 77.1°W) April 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	6.7					(2.4)	2.70
01	200	6.3						2.70
02	290	6.1						2.70
03	280	5.7						2.70
04	200	5.3						2.70
05	270	4.9			---	---	1.7	2.00
06	250	5.8	270	---	119	1.9		3.05
07	250	6.9	240	4.2	109	2.6		3.00
08	270	7.8	225	4.6	105	3.0	3.6	3.05
09	280	8.7	210	4.0	103	3.3	3.5	2.95
10	310	9.4	205	4.9	101	3.4	3.7	2.90
11	310	9.4	210	5.1	102	3.5		2.80
12	320	9.0	215	5.2	101	3.6	3.6	2.80
13	330	10.2	215	5.2	101	3.6		2.75
14	320	10.0	220	5.2	101	3.6		2.70
15	340	9.6	220	5.0	101	3.5		2.75
16	300	9.5	230	4.0	105	3.2		2.80
17	270	9.4	240	4.4	109	2.8	2.0	2.80
18	250	9.5	255	---	119	2.1	2.2	2.90
19	240	9.2			---	---	1.6	2.90
20	240	8.2					3.0	2.80
21	260	7.6					2.6	2.75
22	270	7.0						2.70
23	280	6.8					(3.0)	2.70

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 2

Tromso, Norway (69.7°N, 19.0°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	(4.0)					3.2	----
01	---	(5.4)					3.6	----
02	(345)	(5.2)					4.0	(2.40)
03	(305)	4.9			---	---	3.2	(2.55)
04	300	4.6			---	---	3.0	2.65
05	200	4.4			---	---	2.9	2.70
06	200	5.1	---	---	---	---	1.4	2.80
07	255	5.8	---	---	---	---	<1.7	2.90
08	(250)	6.6	260	---	---	2.3		2.80
09	(245)	7.2	250	---	115	2.6		2.90
10	(250)	7.1	245	---	115	2.7		2.90
11	255	7.9	245	---	110	2.0		2.80
12	255	8.6	245	---	110	2.9		2.90
13	255	8.4	245	---	115	2.8		2.90
14	250	8.2	245	---	110	2.6		2.90
15	245	7.8	245	---	105	2.6		2.95
16	250	8.0			120	2.3		2.90
17	245	6.9			110	---	2.4	2.90
18	(250)	5.9			---	---	3.2	2.90
19	(275)	5.4					3.2	2.80
20	(280)	5.8					<3.4	(2.80)
21	---	(6.0)					3.2	----
22	(260)	(5.3)					3.0	(2.70)
23	---	(5.0)					3.0	----

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 3

Kiruna, Sweden (67.0°N, 20.3°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(325)	(5.0)					3.1	---
01	(310)	(5.2)					<3.8	---
02	(305)	(5.0)					2.2	---
03	(310)	(5.0)					2.2	---
04	300	(4.4)					2.0	(2.7)
05	295	(4.7)			---	E	<2.0	(2.75)
06	275	5.2	---	---	115	<1.7		2.9
07	260	5.6	250	---	---	<2.0		3.0
08	260	6.4	240	---	---	---		3.05
09	250	7.1	230	(4.0)	110	2.4	<1.9	3.0
10	265	7.8	230	(4.0)	110	2.8		3.0
11	275	8.3	230	(4.2)	110	---	<1.9	2.9
12	260	8.6	225	(4.0)	110	2.9		2.9
13	260	9.0	230	4.1	110	<2.9	<3.0	2.9
14	260	8.5	230	---	110	2.6	<3.0	2.9
15	250	8.0	235	---	---	---		3.0
16	255	8.0	240	---	---	2.0	<2.0	3.0
17	260	7.2	240	---	---	<1.8	2.0	3.0
18	260	6.5	---	---	---	---	<3.1	3.0
19	250	(6.0)			---	---	<3.0	(2.9)
20	260	(5.5)			---	---	3.8	(2.9)
21	275	(5.0)			---	---	3.5	(2.8)
22	(300)	(5.2)					3.8	(2.8)
23	(280)	(4.9)					5.0	---

Time: 15.0°E.
Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 4

Fairbanks, Alaska (64.9°N, 147.8°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		(3.5)					4.4	(2.80)
01		(4.6)					4.2	(2.60)
02		(4.6)					4.4	(2.70)
03		(4.0)					3.8	(2.60)
04		(3.5)					3.2	(2.55)
05		(3.8)					3.6	(2.70)
06		(4.3)			---	---	3.1	(2.85)
07		(4.8)		---	---	---		(2.90)
08		(5.4)		---	117	---		(2.95)
09		5.9		---	117	---		3.00
10		(6.4)		---	---	---		2.80
11		6.6		(4.5)	113	---		2.80
12		7.4		---	115	---		2.90
13		7.7		---	---	---		2.85
14		8.0		---	119	---		2.85
15		7.8		---	121	---		3.00
16		(8.2)		---	123	---		(3.05)
17		(8.0)			131	---		(3.05)
18		(7.4)			145	---		(3.10)
19		(6.9)					1.8	(3.10)
20		(5.4)					3.0	(3.20)
21		(4.3)					2.0	(3.00)
22		(4.4)					3.4	(3.10)
23		(4.0)					4.2	(2.90)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 5

Anchorage, Alaska (61.2°N, 149.9°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		2.9						2.50
01		3.3					2.4	2.40
02		3.1					2.1	2.45
03		3.5						2.40
04		3.4						2.40
05		3.5						2.40
06		3.9			---	---		2.50
07		4.9		---	130	2.0		2.80
08		5.5		---	128	2.4		2.80
09		6.0		---	127	2.7		2.80
10		6.3		(4.5)	125	2.8		2.80
11		7.1		4.6	121	3.0		2.70
12		8.0		---	120	3.0		2.75
13		8.4		---	121	3.0		2.75
14		8.6		---	119	2.9		2.80
15		8.6			127	2.7		2.80
16		8.6			127	2.5		2.85
17		8.5			137	2.2		2.90
18		8.3			---	---		2.95
19		6.5						2.90
20		6.0						2.80
21		4.6						2.80
22		3.8						2.80
23		3.2						2.60

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 6

Narsarssuak, Greenland (61.2°N, 45.4°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		---					3.4	----
01		(3.4)					3.8	(2.75)
02		---					3.8	---
03		(4.2)					4.0	(2.85)
04		(3.9)					4.0	(2.70)
05		---					3.9	----
06		(4.1)					3.6	(2.95)
07		(5.2)			---	---	3.0	(3.10)
08		6.1			119	2.7		3.05
09		6.6		---	119	(2.8)		3.00
10		7.0		(4.5)	117	3.0		2.90
11		7.0		(4.6)	115	3.1		2.90
12		7.8		(4.6)	111	(3.1)		2.90
13		8.1		(4.6)	112	3.1		2.85
14		(8.0)		(4.3)	111	(3.0)		(2.85)
15		(8.5)		---	111	(3.0)		(2.90)
16		(7.2)		---	113	2.6		(2.90)
17		(6.8)			120	2.2	3.6	(3.00)
18		(6.2)			---	---	3.3	(2.95)
19		(7.1)					3.2	(3.00)
20		(6.0)					4.2	(2.70)
21		(4.6)					4.5	(2.70)
22		(5.5)					4.0	(2.75)
23		---					4.5	----

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 7

Oslo, Norway (60.0°N, 11.1°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	4.8					<1.4	2.50
01	290	4.6					<1.3	2.50
02	300	4.2					<1.2	2.50
03	300	3.8					<1.1	2.50
04	300	3.6					<1.2	2.60
05	290	3.4					<1.3	2.65
06	275	4.3	---	---	---	---	<1.4	2.70
07	250	5.2	250	---	120	2.0		3.00
08	245	5.8	250	---	115	2.4		3.00
09	250	7.1	240	---	110	2.7		3.00
10	250	7.8	235	---	110	2.9		3.00
11	260	8.1	230	---	110	3.0		2.90
12	250	9.1	235	---	110	3.1		2.90
13	250	9.5	240	---	110	3.1		3.00
14	250	9.6	235	---	110	3.0		3.00
15	245	9.7	240	---	110	2.9		3.00
16	245	9.4	245	---	110	2.6		3.05
17	245	9.2	---	---	115	2.3		3.00
18	240	8.7	---	---	---	2.0		3.05
19	240	8.0					<1.4	3.00
20	240	6.3					<1.4	2.85
21	245	6.2					<1.4	2.80
22	260	5.6					<1.4	2.60
23	285	5.0					<1.4	2.50

Time: 15.0°E.
Sweep: 0.7 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 8

Upsala, Sweden (59.8°N, 17.6°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	4.5						2.6
01	320	4.4						2.7
02	330	4.2					1.8	2.6
03	315	3.5						2.7
04	310	3.3						2.7
05	290	3.7			---	E		2.75
06	260	4.6			---	1.5		2.9
07	250	5.5	240	3.4	115	2.0		2.9
08	265	6.4	240	3.8	110	2.4		2.9
09	270	7.3	230	4.1	110	2.8		2.9
10	270	8.1	220	4.3	105	2.9		2.9
11	270	8.8	220	4.5	105	3.0		2.9
12	265	9.4	220	4.5	105	3.1		2.9
13	260	9.7	230	4.5	105	3.1		2.9
14	245	9.7	225	4.1	105	3.0		3.0
15	240	9.6	230	3.8	110	2.8		3.0
16	235	9.4	240	3.7	110	2.5		3.0
17	235	9.0	---	---	115	2.2		3.0
18	230	8.8			---	1.5		3.0
19	220	7.8			---	E		2.9
20	230	6.7						2.9
21	260	5.4						2.7
22	275	5.0					3.0	2.7
23	300	4.4					3.0	2.7

Time: 15.0°E.
Sweep: 1.4 Mc to 17.0 Mc in 6 minutes, automatic operation.

Table 9

Adak, Alaska (51.9°N, 176.6°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	4.0						2.6
01	310	4.0						2.6
02	310	3.8						2.6
03	320	3.7						2.5
04	310	3.8						2.55
05	320	3.7						2.6
06	270	4.7			145	1.7		2.9
07	250	6.6	---	---	113	(2.4)		3.15
08	230	7.6	220	---	110	(2.9)		3.15
09	240	9.4	220	---	110	(3.1)		3.1
10	250	10.5	210	---	111	(3.3)		3.0
11	260	11.2	210	---	110	(3.4)		3.0
12	250	11.6	220	---	119	---		2.9
13	250	11.6	220	---	(121)	---		2.95
14	250	11.2	220	---	117	---		2.95
15	230	10.7	220	---	111	(2.9)		3.0
16	230	10.6	---	---	114	(2.8)		3.05
17	220	9.7			111	2.3		3.1
18	220	9.0						3.1
19	230	7.4						3.0
20	230	6.4						3.0
21	240	5.3						2.9
22	270	4.7						2.7
23	290	4.4						2.7

Time: 180.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 10

Graz, Austria (47.1°N, 15.5°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	5.2						
01	340	5.1						
02	310	5.0						
03	300	4.8						
04	300	4.8						
05	300	4.4						
06	290	4.6						
07	240	7.0						
08	240	8.3		(3.8)				
09	230	>9.0	(220)	(4.3)				
10	230	10.3	225	4.3	---	(3.5)		
11	250	>11.0	210	4.5	---	(3.7)		
12	260	>11.0	210	4.9	---	(3.8)		
13	250	>11.0	210	4.5	---	(3.8)		
14	235	10.8	220	4.2	---	(3.5)		
15	230	10.8				(3.3)		
16	230	10.2						
17	230	10.0						
18	230	9.4						
19	240	8.2						
20	250	7.4						
21	260	6.8						
22	290	6.1						
23	300	5.8						

Time: 15.0°E.
Sweep: 2.5 Mc to 12.0 Mc in 2 minutes.

Table 11

Ft. Monmouth, New Jersey (40.3°N, 74.1°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	6.0						2.75
01	270	5.5						2.75
02	280	5.4						2.80
03	270	5.0						(2.80)
04	280	(4.2)						2.75
05	280	4.0						(2.85)
06	260	4.8			---	<1.6		3.00
07	240	6.8	245	---	113	2.4		3.20
08	240	8.2	230	---	111	(3.0)		3.20
09	240	8.9	220	4.6	110	(3.3)		3.10
10	270	9.8	210	4.8	109	(3.5)		3.00
11	260	10.2	210	5.0	109	(3.6)		3.00
12	270	10.8	210	5.0	111	(3.7)		2.95
13	260	11.1	220	5.0	109	(3.7)		2.90
14	270	10.8	220	4.6	111	(3.6)		2.90
15	260	10.8	225	4.5	111	(3.4)		2.90
16	250	10.6	230	---	111	(3.1)		2.95
17	240	10.0	240	---	117	2.5		3.00
18	240	9.6	---	---	---	<1.7		3.05
19	240	8.8						2.95
20	240	7.8						2.90
21	250	7.2						2.90
22	260	6.8						2.80
23	270	6.5						(2.80)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 12

White Sands, New Mexico (32.3°N, 106.5°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.3					(2.2)	2.65
01	280	5.5					(2.9)	2.70
02	280	5.1					(2.3)	2.70
03	260	5.0					(2.8)	2.70
04	<280	4.8					2.2	2.65
05	<280	4.6					(2.3)	2.75
06	270	5.3					2.4	2.90
07	240	7.7	250	---	(115)	(2.2)	3.0	3.20
08	250	9.5	230	---	109	(2.8)	4.3	3.15
09	240	10.6	220	---	(109)	(3.2)	4.8	3.05
10	260	11.2	210	(4.4)	109	(3.5)	4.5	2.95
11	260	11.7	205	(5.0)	(109)	(3.7)	4.4	2.85
12	280	12.4	210	(4.9)	(110)	(3.8)	4.1	2.85
13	280	12.5	215	(5.3)	111	(3.8)	4.4	2.80
14	270	12.4	220	(5.0)	111	(3.8)	4.7	2.80
15	260	12.0	230	---	111	(3.5)	3.6	2.80
16	260	11.6	235	---	111	(3.2)	3.9	2.85
17	240	11.4	240	---	112	(2.6)	3.4	2.95
18	230	10.6					2.0	3.00
19	220	9.1					2.9	3.00
20	220	7.1					2.4	2.90
21	<250	6.3					(2.7)	2.85
22	260	5.9					(2.2)	2.80
23	270	5.2					(2.1)	2.70

Time: 105.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 13

Okinawa I. (26.3°N, 127.8°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	10.4						2.80
01	260	10.1					1.9	2.85
02	250	9.4						2.90
03	240	8.8					2.2	3.05
04	220	6.9						3.00
05	230	5.7						2.80
06	260	5.1					2.0	2.75
07	240	7.6			131	2.1	2.8	3.20
08	230	10.0	240	---	113	(2.9)	4.4	3.25
09	(250)	10.8	230	---	109	(3.3)	4.5	3.10
10	(270)	12.4	230	---	110	(3.5)	4.8	3.00
11	270	13.3	220	---	109	(3.7)	4.8	2.90
12	290	14.0	220	---	111	(3.8)	5.1	2.85
13	330	15.0	210	---	110	(3.9)	5.0	2.80
14	330	16.0	220	---	111	3.8	4.9	2.80
15	320	16.2	230	---	113	3.7	4.7	2.80
16	310	16.4	230	---	113	3.5	4.7	2.80
17	280	16.1	235	---	115	3.0	4.4	2.85
18	250	14.8	---	---	121	2.3	3.2	2.90
19	240	14.9					3.1	2.90
20	250	(15.2)					2.1	2.85
21	230	(14.8)					2.2	(2.80)
22	240	13.3						2.85
23	250	(11.4)						(2.80)

Time: 135.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 14

Formosa, China (25.0°N, 121.5°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	260	11.9					<1.7	2.9
01	260	9.8					<1.7	3.0
02	260	9.6					<1.7	3.0
03	---	---						---
04	---	---						---
05	---	---						---
06	---	---						---
07	---	---						---
08	240	11.0	---	---	120	3.1		3.0
09	250	12.5	240	---	120	3.4	<3.8	3.0
10	260	13.4	230	---	120	(3.6)	<4.1	2.9
11	(260)	14.1	220	---	120	---	4.3	2.7
12	(280)	15.2	220	---	120	---	<5.0	2.7
13	(270)	16.2	220	---	120	3.8	4.7	2.7
14	(270)	16.4	240	---	120	3.6	<4.4	2.8
15	270	>16.8	240	---	120	3.5	4.2	2.8
16	(270)	>16.8	240	---	120	(3.2)	4.0	(2.9)
17	260	>16.5	240	---	120	2.8	3.4	2.95
18	260	>16.5					<2.8	(2.8)
19	280	>16.5					2.7	(2.8)
20	280	>16.8					2.2	(2.7)
21	240	>16.8					2.2	(2.95)
22	240	13.6					<1.8	2.9
23	260	12.6					<1.7	2.9

Time: 120.0°E.
Sweep: 1.1 Mc to 19.5 Mc in 15 minutes, manual operation.

Table 15

Maui, Hawaii (20.8°N, 156.5°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	8.2						3.00
01	250	7.1						3.00
02	240	6.4						3.00
03	230	5.3						2.90
04	260	4.0						2.80
05	290	3.4						2.70
06	310	3.7						2.65
07	250	7.4			130	2.0		3.10
08	250	10.0	240	---	117	2.8	3.7	3.20
09	260	11.3	230	---	111	3.3	4.3	3.00
10	270	12.3	220	---	111	3.6	5.0	2.90
11	280	12.8	215	---	111	3.8	4.7	2.75
12	290	13.8	210	---	111	3.9	4.6	2.75
13	320	14.3	215	5.2	109	3.9	4.8	2.70
14	340	14.6	220	---	109	3.8	4.3	2.70
15	330	14.8	235	---	111	3.6	3.8	2.70
16	300	15.3	235	---	111	3.4	4.0	2.80
17	260	14.2	240	---	117	2.9	3.4	2.80
18	250	13.6			127	2.0	2.6	2.90
19	250	13.2					2.8	2.90
20	240	12.3					2.4	2.90
21	230	11.6					1.8	2.90
22	250	10.1						2.90
23	250	9.4						3.00

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 16

Puerto Rico, W. I. (18.5°N, 67.2°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	8.4						2.95
01	260	7.8						3.00
02	250	7.5						3.05
03	240	6.2						3.10
04	250	5.3						3.00
05	250	4.9						2.80
06	290	4.6					(2.3)	2.80
07	250	7.1			---	>1.8		3.20
08	240	9.2	240	---	115	2.8		3.20
09	260	10.8	230	---	111	3.3		3.05
10	280	12.1	230	---	111	3.6		3.00
11	280	12.6	220	5.2	111	3.8		2.95
12	290	12.7	215	5.3	111	3.9		2.85
13	300	13.1	220	5.3	112	3.9		2.85
14	300	12.9	220	5.3	111	3.8		2.80
15	300	12.8	225	---	113	3.6		2.80
16	(280)	12.3	230	---	111	3.4	3.4	2.80
17	250	11.8	240	---	117	2.9	3.7	2.80
18	250	11.5	---	---	---	---		2.85
19	240	10.9					2.7	2.95
20	250	9.6					(2.8)	2.90
21	250	9.1					(3.1)	2.80
22	280	8.6					(3.2)	2.80
23	280	8.6						2.85

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 17

Guam I. (13.6°N, 144.9°E) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	235	13.0					1.7	3.10
01	230	12.5					1.4	3.15
02	225	10.4						3.20
03	230	8.6						3.15
04	235	7.1						3.20
05	235	5.8					2.2	3.20
06	235	4.8					2.1	3.20
07	250	8.3			121	2.0	2.5	3.20
08	240	10.8	230	---	113	2.9		3.10
09	---	12.2	220	---	111	3.3		2.90
10	---	13.0	215	---	111	3.6		2.65
11	---	13.0	210	---	113	3.7		2.40
12	---	12.5	210	---	111	3.8		2 35
13	---	12.3	200	---	112	3.7		.30
14	---	12.8	205	---	111	3.6		2.40
15	---	13.1	220	---	111	3.5		2.50
16	---	13.8	230	---	111	3.3		2.50
17	---	14.0	240	---	117	2.9	3.5	2.55
18	265	14.2			125	2.0	2.6	2.50
19	310	13.5					2.0	2.45
20	340	12.9						2.40
21	300	12.8					1.6	2.60
22	245	12.6					2.7	2.80
23	235	13.0					2.6	3.05

Time: 150.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 18

Panama Canal Zone (9.4°N, 79.9°W) March 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	9.6						3.05
01	230	8.8						3.20
02	230	6.6						3.20
03	230	5.1						3.00
04	240	4.4						2.90
05	250	3.7					1.8	2.80
06	290	3.6						2.70
07	250	7.6			125	(2.1)		3.15
08	(250)	10.0	235	---	113	3.0	3.2	3.00
09	(270)	11.4	225	---	110	(3.5)		2.95
10	280	12.8	220	---	110	3.8	4.1	2.90
11	(280)	13.3	210	(5.4)	110	(4.0)		2.85
12	290	14.0	210	(5.6)	110	(4.0)		2.80
13	280	14.2	210	5.6	110	(4.1)		2.75
14	(300)	14.5	210	---	109	(4.0)		2.75
15	(310)	14.4	225	---	109	(3.8)	4.5	2.75
16	290	14.4	230	---	110	3.3	4.1	2.75
17	280	(13.8)	240	---	112	2.9	3.8	(2.80)
18	250	(13.2)	---	---	125	(2.1)	2.8	(2.80)
19	240	(12.1)					2.3	(2.85)
20	250	(11.9)						(2.85)
21	230	(11.6)						(2.85)
22	240	(10.8)						(2.85)
23	240	10.1						2.85

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 19

Resolute Bay, Canada (74.7°N, 94.9°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	4.0						3.0
01	250	3.8						3.0
02	260	3.3					<1.2	3.0
03	260	3.3					<1.3	3.0
04	270	3.0	---	---				3.0
05	270	3.2	---	---	---	---	<1.4	(2.9)
06	270	3.2	---	---	---	---	<1.4	3.05
07	270	4.0	---	---	---	---	<1.4	(3.0)
08	260	4.2	---	---	---	1.2	<1.4	3.05
09	250	4.6	---	---	120	1.5		(3.2)
10	240	5.2	---	---	105	1.5		3.2
11	250	5.2	---	---	110	1.6		3.1
12	250	5.4	---	---	115	1.8		3.2
13	240	5.6	---	---	110	1.9		3.2
14	240	5.6	---	---	110	1.8		3.2
15	260	5.2	---	---	120	1.6		3.05
16	250	5.2	---	---	120	1.6		2.95
17	250	5.2	---	---	---	1.7		3.0
18	250	5.2			---	---	<1.2	2.9
19	250	5.0					<1.2	(3.05)
20	240	4.7					<1.6	3.0
21	250	4.2					<1.1	3.0
22	250	4.0					<1.4	2.9
23	250	4.2						2.9

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 20

Kiruna, Sweden (67.8°N, 20.3°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	305	(3.7)					3.0	---
01	300	(3.8)					2.5	---
02	310	(4.0)					2.5	---
03	295	(3.5)					<1.6	(2.8)
04	285	(3.8)					<1.1	(2.95)
05	265	3.7						2.85
06	270	3.0						3.0
07	260	4.0			---	E		3.05
08	245	5.5			---	---		3.1
09	230	6.5			---	---		3.3
10	230	7.2			---	---		3.25
11	230	7.3			---	2.4		3.2
12	225	8.1			---	2.5		3.2
13	230	8.2			---	---		3.3
14	225	8.0			---	---		3.3
15	230	7.3			---	---		3.3
16	230	6.4			---	---		3.2
17	225	5.5			---	E	<1.5	3.2
18	225	4.3						(3.2)
19	250	4.2					<2.0	---
20	(275)	(3.4)					<2.0	---
21	(275)	(4.0)					3.0	---
22	(300)	(3.8)					3.5	---
23	(300)	(4.6)					<3.4	---

Time: 15.0°E.
Sweep: 0.8 Mc to 14.0 Mc in 30 seconds.

Table 21

Anchorage, Alaska (61.2°N, 149.9°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		2.0						2.60
01		1.8						2.45
02		1.9					1.6	2.50
03		2.0						2.50
04		(1.8)						(2.45)
05		1.9					1.4	2.50
06		1.8						(2.50)
07		2.7						2.70
08		4.5			130	---		2.90
09		6.0			131	2.2		3.05
10		6.8		---	131	2.5		3.00
11		7.6		---	129	2.7		2.90
12		8.0		---	130	2.8		2.90
13		8.4		---	131	2.8		2.90
14		8.6		---	131	2.7		2.85
15		8.5		---	136	2.4		2.90
16		8.4			140	2.0		2.95
17		7.8			---	---		2.95
18		6.2						2.90
19		4.7						2.90
20		3.3						2.90
21		2.7						2.80
22		2.4						2.70
23		2.0						(2.70)

Time: 150.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 22

Churchill, Canada (58.8°N, 94.2°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.0			120	2.5	5.0	(2.9)
01	300	3.8			115	2.4	5.0	(3.05)
02	300	3.8			130	2.4	5.0	(3.0)
03	300	3.6			120	3.2	4.5	(2.8)
04	320	(3.6)			120	2.6	4.6	---
05	340	3.8			110	3.0	4.5	(2.9)
06	340	4.0			115	3.2	4.0	2.8
07	330	4.0			110	3.0	4.1	3.0
08	290	4.8			110	2.9	3.6	3.2
09	280	5.8	---	---	120	3.0		3.2
10	270	6.3	---	---	120	3.0		3.2
11	270	6.9	250	---	125	3.0		3.2
12	270	7.7	260	4.0	125	3.1		3.2
13	270	8.0	250	4.1	120	3.1		3.15
14	260	8.8	260	4.1	125	3.0		3.15
15	250	8.8	240	---	130	2.8		3.1
16	260	8.0	---	---	130	2.4		3.2
17	250	6.9			130	2.4		3.2
18	260	5.2			120	2.8	3.0	3.2
19	290	5.0			120	2.7	3.3	3.1
20	300	4.6			120	2.8	3.0	3.0
21	300	4.5			130	2.6	4.0	(3.0)
22	280	4.5			130	2.8	5.0	3.2
23	300	4.3			130	2.6	5.0	(3.0)

Time: 90.0°W.
Sweep: 0.6 Mc to 15.0 Mc in 16 seconds.

Table 23

Winnipeg, Canada (49.9°N, 97.4°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.0					<1.7	2.8
01	320	2.9					<1.7	2.7
02	320	2.8					<1.7	2.7
03	320	2.8					<1.7	2.7
04	310	2.7					<1.7	2.7
05	320	2.4					<1.7	2.7
06	320	2.4					<1.7	2.7
07	300	2.8					<1.7	2.7
08	270	5.0			120	2.0		3.0
09	250	6.0			120	2.6		3.0
10	270	7.2	240	4.0	120	2.8		3.0
11	280	7.9	240	4.0	120	3.0		3.0
12	280	8.4	240	4.3	125	3.1		3.0
13	280	8.8	240	4.3	125	3.1		3.0
14	280	8.8	240	4.2	120	3.1		2.9
15	270	9.0	240	4.0	120	3.0		2.9
16	260	9.1	250	---	120	2.8		3.0
17	250	9.0			130	2.3		3.0
18	240	8.0			---	1.7	<1.6	3.0
19	240	6.8					<1.7	2.95
20	240	5.3					<1.6	2.9
21	260	4.5					<1.7	2.9
22	280	4.0					<1.7	2.9
23	290	3.2					<1.7	2.8

Time: 90.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 15 seconds.

Table 24

Schwarzenburg, Switzerland (46.8°N, 7.3°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.0						3.1
01	290	4.0						3.2
02	290	3.8						3.2
03	290	3.8						3.2
04	280	3.6						3.2
05	260	3.3						3.3
06	245	3.1						3.35
07	240	3.4			---	---		3.4
08	200	6.4			100	1.9		3.8
09	200	8.0			100	2.5		3.8
10	200	8.5			100	2.8		3.8
11	200	10.0			100	3.0		3.8
12	200	10.0			100	3.2		3.6
13	200	9.4			100	3.2		3.6
14	200	9.5			100	3.2		3.6
15	200	9.2			100	3.0		3.6
16	200	9.1			100	2.7		3.7
17	200	8.5			100	2.3		3.75
18	200	7.3						3.7
19	200	6.4						3.7
20	200	5.4						3.7
21	215	4.2						3.45
22	260	3.5						3.25
23	300	4.0						3.2

Time: 15.0°E.
Sweep: 1.0 Mc to 25.0 Mc in 30 seconds.

Table 25

Ottawa, Canada (45.4°N, 75.9°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00		3.7					<1.6	3.0
01		3.6					<1.6	3.0
02		3.5					<1.6	2.9
03		3.2					<1.6	3.0
04		3.2					<1.6	3.0
05		3.0					<1.6	3.05
06		2.8					<1.6	3.05
07		4.2			---	1.7		3.1
08		6.2			120	2.3		3.3
09		7.1		4.2	110	2.9		3.3
10		8.2		4.2	110	3.1		3.25
11		9.0		4.6	110	3.3		3.2
12		9.4		4.6	110	3.4		3.2
13		9.2		4.7	110	3.4		3.2
14		9.6		4.5	110	3.3		3.1
15		9.2		4.3	110	3.0		3.15
16		9.3		3.7	110	2.7		3.2
17		9.0			120	2.1		3.2
18		8.2			---	---	<1.6	3.1
19		6.8			---	---	<1.6	3.1
20		5.5			---	---	<1.6	3.1
21		4.8			---	---	<1.6	3.1
22		4.1			---	---	<1.6	3.05
23		3.9					<1.6	3.0

Time: 75.0°W.
Sweep: 1.0 Mc to 15.0 Mc in 15 seconds.

Table 26

Leopoldville, Belgian Congo (4.4°S, 15.2°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	7.5						2.6
01	250	7.0						2.7
02	240	6.4						2.8
03	230	5.2					1.5	2.8
04	230	4.6					1.6	2.9
05	250	4.6	---	---	---	---	2.1	2.8
06	260	7.6	245	---	115	2.6	2.9	2.9
07	280	8.9	230	---	110	3.2		2.7
08	310	9.5	220	4.6	110	3.6		2.5
09	340	10.4	220	5.0	110	3.7		2.3
10	420	>11.2	220	5.0	110	3.8		2.3
11	405	12.3	210	5.1	110	3.9		2.3
12	380	13.1	210	5.0	110	4.0		2.3
13	395	13.2	220	5.0	110	3.7		<2.4
14	370	13.5	220	5.3	110	3.6		2.4
15	360	>13.3	230	---	110	3.3		2.4
16	340	13.5	240	---	110	2.8	3.0	2.4
17	285	>13.4	260	---	---	---	2.6	2.4
18	290	>13.4					2.8	<2.5
19	290	---						---
20	260	>13.3						2.6
21	230	>13.5						2.9
22	220	13.1						3.0
23	205	9.4						2.8

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 27

Talara, Peru (4.6°S, 81.3°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	9.7					5.0	3.10
01	220	8.0					6.0	3.15
02	220	6.6					5.0	3.30
03	230	6.1					5.2	3.30
04	240	4.9					4.8	3.20
05	240	4.0					4.7	3.30
06	250	3.7					4.7	3.20
07	260	7.0			123	2.0	4.4	3.10
08	(240)	9.5	235	---	111	2.9	4.7	2.90
09	---	11.0	220	---	111	3.4	5.6	2.75
10	(300)	11.6	210	---	111	3.7	6.6	2.65
11	(300)	11.7	200	4.9	109	3.8	5.2	2.40
12	300	11.4	200	5.0	109	4.0	6.9	2.30
13	280	12.0	200	5.0	109	4.0	6.2	2.30
14	(320)	12.3	200	4.8	108	3.9	5.6	2.40
15	---	12.5	200	---	107	3.7	5.0	2.50
16	(240)	12.3	215	---	107	3.5	5.3	2.60
17	240	12.4	230	---	109	2.9	4.5	2.60
18	260	12.7			116	2.3	4.3	2.65
19	280	(13.0)					3.5	(2.60)
20	310	(12.4)					3.8	(2.60)
21	280	(13.0)					3.4	(2.85)
22	250	(11.6)					3.7	(3.00)
23	240	11.6					3.8	3.00

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 28

Elisabethville, Belgian Congo (11.6°S, 27.5°E) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	230	6.4						2.65
01	245	5.4						2.7
02	240	4.7						2.7
03	240	4.0					1.6	2.7
04	265	4.1	---	---	---	---	1.8	2.7
05	250	7.0	240	---	115	2.4	2.4	2.9
06	260	8.5	235	---	110	3.0		2.8
07	300	9.6	230	---	110	3.6		2.6
08	320	10.3	225	5.0	110	3.8		2.5
09	330	11.0	220	5.0	110	3.9		2.45
10	335	11.5	220	5.0	110	4.0		2.4
11	335	11.8	220	5.0	110	4.0		2.5
12	325	>11.8	220	5.0	110	3.9		2.5
13	325	>11.6	250	---	110	3.8		2.45
14	320	11.8	240	---	110	3.4	4.0	2.5
15	290	>11.5	240	---	110	2.9	3.4	2.5
16	265	>11.4	255	---	---	2.2	3.0	2.6
17	250	11.1					2.5	2.6
18	260	11.1					1.9	2.6
19	250	11.2						2.6
20	240	11.0						2.7
21	240	10.3						2.7
22	240	8.9						2.7
23	225	7.8						2.7

Time: 0.0°.
Sweep: 1.0 Mc to 16.0 Mc in 7 seconds.

Table 29

Huancayo, Peru (12.0°S, 75.3°W) February 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	(9.2)					4.6	(3.05)
01	250	(7.4)					4.5	(3.10)
02	230	6.6					4.7	3.20
03	230	5.8					3.3	3.25
04	230	4.8					(3.6)	3.30
05	230	3.7					(5.9)	3.30
06	280	5.0			---	---	4.2	3.00
07	240	8.4	240	---	111	2.6	8.5	3.00
08	---	10.2	225	---	107	---	11.5	2.80
09	(300)	11.0	210	---	105	---	12.5	2.55
10	(300)	11.2	205	4.9	105	---	12.6	2.45
11	(330)	11.2	200	5.1	105	---	12.7	2.40
12	355	11.3	200	5.1	105	---	12.7	2.35
13	335	11.0	200	5.0	103	---	12.7	2.35
14	(330)	11.5	200	4.9	105	---	12.3	2.35
15	---	11.4	200	---	106	---	11.9	2.40
16	---	11.4	200	---	105	---	11.6	2.45
17	240	11.7	230	---	105	---	9.3	2.40
18	260	11.5			113	2.1	6.0	2.35
19	310	11.0						2.30
20	350	9.6						2.30
21	370	(10.1)						(2.40)
22	330	(9.9)					(3.6)	(2.60)
23	290	(9.9)					(4.2)	(2.70)

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 30

Lindau/Harz, Germany (51.6°N, 10.1°E) January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	2.9					2.3	2.8
01	280	2.8					2.4	2.9
02	300	2.8					2.3	2.85
03	290	2.6					2.7	2.85
04	280	2.4					2.4	2.9
05	265	2.3					2.6	3.0
06	260	2.2					2.8	3.05
07	265	2.3					2.8	3.05
08	230	4.0			---	E	2.4	3.2
09	220	6.8			---	1.8	3.3	3.5
10	220	7.7			110	2.4	3.7	3.5
11	220	8.2			110	2.5	3.6	3.4
12	225	8.4			110	2.6	3.7	3.5
13	225	8.7			110	2.7	3.8	3.4
14	230	8.4			110	2.6	3.8	3.4
15	220	7.9			115	2.3	3.8	3.45
16	215	6.8			---	2.0	3.2	3.4
17	215	6.7			---	E	2.9	3.4
18	215	5.2					2.7	3.3
19	225	3.9					2.3	3.2
20	250	3.2					2.2	3.0
21	275	3.0					2.2	2.9
22	300	2.8					2.1	2.8
23	305	2.8					2.3	2.8

Time: 15.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 4 minutes.

Table 31

Wakkanai, Japan (45.4°N, 141.7°E) January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	3.3						
01	310	3.3					2.1	
02	280	3.3						
03	260	3.3						
04	270	3.3						
05	260	3.0						
06	270	2.8						
07	250	4.2						
08	230	6.8						
09	240	8.2						
10	240	9.6						
11	240	9.4						
12	240	8.6						
13	240	8.0						
14	240	8.4						
15	230	8.0						
16	220	6.6						
17	230	5.8						
18	230	4.6						
19	250	3.4						
20	290	3.0						
21	310	3.2						
22	310	3.3						
23	320	3.3						

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 32

Akita, Japan (39.7°N, 140.1°E) January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	340	3.3					2.6	
01	330	3.4					2.5	
02	300	3.2					2.5	
03	290	3.2					2.5	
04	290	3.1					2.5	
05	300	2.9					2.5	
06	290	2.8					2.5	
07	260	5.0					2.5	
08	240	7.4						
09	250	8.5						
10	260	9.6						
11	270	10.1						
12	260	9.0						
13	260	8.8						
14	260	8.0						
15	260	8.1						
16	250	7.0					3.0	
17	250	5.9					3.0	
18	250	5.1					3.0	
19	250	3.7					3.0	
20	280	3.0					2.7	
21	320	3.2					2.7	
22	340	3.2					3.0	
23	350	3.2					2.8	

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 33

Tokyo, Japan (35.7°N, 139.5°E) January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	310	3.3					2.3	2.8
01	300	3.3						2.85
02	260	3.4					2.4	3.1
03	240	3.2					2.3	3.0
04	240	3.0					2.1	2.9
05	280	2.8						3.0
06	260	2.9						3.0
07	230	5.6	---	---	140	1.6		3.3
08	230	7.5	240	---	120	2.4	2.5	3.5
09	240	8.4	230	---	110	3.0	3.1	3.3
10	250	10.0	230	4.7	110	3.2	>3.4	3.3
11	250	10.3	230	4.8	110	3.3	3.4	3.3
12	240	9.9	230	4.8	110	3.3	3.3	3.3
13	240	9.2	230	4.6	110	>3.2		3.3
14	240	8.5	230	4.1	110	3.1	3.0	3.3
15	240	8.3	230	3.4	120	2.8	3.0	3.3
16	230	7.5	230	---	120	2.3	2.6	3.4
17	220	6.4					2.1	3.3
18	230	5.5					2.2	3.2
19	240	4.3					2.4	3.3
20	250	3.4					2.5	3.1
21	280	3.1						3.0
22	290	3.3						2.9
23	300	3.2						2.9

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 34

Yamagawa, Japan (31.2°N, 130.6°E) January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	290	3.5					2.3	
01	290	3.5					2.3	
02	290	3.6					2.3	
03	250	3.4					2.3	
04	250	2.9					2.3	
05	310	2.7					2.2	
06	310	2.7					2.1	
07	270	3.8					2.2	
08	230	7.3						
09	240	8.5						
10	240	9.7						
11	250	10.5						
12	250	11.0					4.8	
13	250	11.1						
14	250	10.8						
15	240	9.6						
16	240	9.0					3.4	
17	230	8.1					3.0	
18	210	7.0					2.4	
19	230	6.2					2.3	
20	230	5.5					2.3	
21	240	5.0					2.3	
22	260	4.0					2.3	
23	290	3.7					2.3	

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 35

Talara, Peru (4.6°S, 81.3°W) January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	240	9.2					5.7	3.20
01	240	7.3					5.9	3.30
02	240	6.3					5.2	3.05
03	240	5.2					4.7	3.15
04	240	4.4					3.8	3.15
05	240	4.4					4.2	3.25
06	250	3.9			---	---	4.0	2.90
07	250	7.2	---	---	121	---	4.8	3.00
08	---	9.8	230	---	113	2.9	6.0	3.00
09	(300)	11.2	215	---	109	3.4	5.8	2.85
10	(300)	11.4	210	4.8	110	3.6	6.8	2.65
11	320	11.6	200	4.9	111	3.8	7.6	2.40
12	330	11.6	200	5.0	111	3.9	5.4	2.30
13	(340)	11.8	200	5.0	110	3.9	6.3	2.30
14	(320)	11.5	195	4.9	111	3.7	5.5	2.20
15	(310)	11.1	200	---	109	3.5	5.3	2.45
16	---	11.6	225	---	111	3.3	6.6	2.55
17	---	11.6	240	---	113	2.9	5.3	2.70
18	260	11.6			117	2.4	5.4	2.80
19	260	11.8					3.8	2.85
20	270	12.3					3.3	2.90
21	260	12.0					3.0	2.90
22	240	11.6					3.8	2.95
23	240	11.4					5.2	3.10

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 36

Huancayo, Peru (12.0°S, 75.3°W) January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	330	(8.2)						(2.90)
01	300	(7.2)						(2.90)
02	290	6.4						3.00
03	280	5.6						3.20
04	260	5.0						3.35
05	240	3.9						3.35
06	270	6.0			129	---		3.10
07	240	8.9	235	---	111	2.6	7.0	3.00
08	---	10.3	220	---	109	3.1	10.5	2.90
09	300	10.9	210	5.0	109	---	12.0	2.65
10	300	10.8	205	4.9	107	---	12.5	2.35
11	330	10.7	200	5.1	107	---	12.6	2.30
12	350	10.3	200	5.1	107	---	12.6	2.30
13	340	10.0	200	5.1	107	---	12.7	2.25
14	320	10.1	200	5.0	107	---	12.4	2.35
15	(300)	10.3	200	4.7	109	---	11.7	2.40
16	---	10.5	210	---	109	(3.1)	10.7	2.45
17	240	10.5	235	---	109	2.7	8.5	2.50
18	270	11.0			119	2.1	5.2	2.55
19	280	11.0						2.60
20	320	10.2						2.50
21	340	9.6						2.45
22	340	9.1						2.50
23	330	9.2						2.70

Time: 75.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 37

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<260	5.6					2.2	2.8
01	<250	5.2					1.9	2.9
02	<250	4.9					2.2	2.9
03	240	4.1					1.8	2.9
04	---	3.6					1.7	2.8
05	280	3.4						2.8
06	260	5.0	250	2.8	130	2.0	2.7	3.0
07	280	6.1	230	4.2	110	2.7	3.6	3.0
08	350	7.0	220	4.7	110	3.2	3.7	2.8
09	350	8.1	210	5.0	110	3.5	4.2	2.7
10	350	8.6	210	5.1	110	3.7	4.1	2.7
11	360	9.3	210	5.2	110	3.8		2.7
12	350	9.4	210	5.2	110	3.9		2.7
13	350	9.3	210	5.2	110	4.0		2.8
14	350	9.3	210	5.1	110	3.9	4.0	2.7
15	330	9.2	210	5.0	110	3.6	4.2	2.8
16	320	8.8	210	4.8	110	3.4	4.2	2.8
17	300	8.6	220	4.4	110	3.0	3.9	2.9
18	270	8.2	230	3.6	120	2.4	3.2	2.9
19	250	8.1					2.9	2.9
20	<250	7.8					2.4	2.9
21	240	6.8					2.2	2.9
22	250	5.8					2.0	2.8
23	<280	5.6					2.1	2.75

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 38

Capetown, Union of S. Africa (34.2°S, 18.3°E) January 1956

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	4.8					2.0	2.7
01	270	4.6					2.5	2.8
02	<280	4.6					2.6	2.8
03	270	4.2					2.2	2.8
04	<280	3.8					2.3	2.75
05	<280	3.6					2.0	2.7
06	270	4.5	---	---	140	1.6	2.5	2.9
07	280	5.9	240	3.6	120	2.4	3.1	2.9
08	340	6.7	230	4.6	110	3.0	3.5	2.7
09	360	7.5	220	4.8	110	3.3	4.0	2.6
10	360	8.0	210	4.9	110	3.6	4.0	2.6
11	360	8.1	210	5.1	110	3.7	4.0	2.6
12	350	8.6	200	5.1	110	3.8	4.1	2.6
13	360	9.0	210	5.1	110	3.9		2.7
14	360	9.0	210	5.1	110	3.8	4.1	2.7
15	340	9.2	210	5.0	110	3.7	3.8	2.7
16	340	8.6	210	4.9	110	3.6	4.1	2.8
17	320	8.0	220	4.7	110	3.2	4.1	2.8
18	300	7.6	230	4.3	110	2.8	3.8	2.8
19	270	7.4	240	3.4	120	2.3	3.3	2.9
20	250	7.4					3.0	3.0
21	240	6.8					2.7	2.9
22	240	5.6					2.9	2.9
23	260	5.0					2.1	2.8

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 39

De Bilt, Holland (52.1°N, 5.2°E) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.1						2.5
01	300	3.1						2.5
02	290	3.0						2.5
03	280	2.7						2.55
04	270	2.6						2.6
05	260	2.4						3.0
06	240	2.3						2.9
07	240	3.0						2.9
08	215	5.6	---	---	140	1.9		3.4
09	220	7.2	220	3.0	125	2.2		3.5
10	220	7.4	225	3.4	115	2.5	2.6	3.5
11	220	7.9	220	3.7	120	2.6	2.8	3.5
12	220	8.0	225	3.6	120	2.7	2.6	3.4
13	230	7.9	225	3.3	120	2.5	2.3	3.4
14	220	7.7	230	3.0	125	2.3		3.4
15	215	7.3	---	---	140	1.9		3.4
16	210	6.1						3.3
17	215	5.0						3.3
18	225	3.9						3.2
19	240	3.0						3.15
20	<270	2.5						2.9
21	<300	2.5						2.5
22	310	2.7						2.5
23	305	2.8						2.5

Time: 0.0°.
Sweep: 0.8 Mc to 20.0 Mc in 20 seconds.

Table 40

Wakkanai, Japan (45.4°N, 141.7°E) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.2					2.0	
01	310	3.3					2.0	
02	300	3.3						
03	270	3.2						
04	260	3.3						
05	260	3.2						
06	250	3.0						
07	230	5.0						
08	220	7.0						
09	220	8.0						
10	230	9.0						
11	230	9.3						
12	240	8.9						
13	230	8.1						
14	230	8.0						
15	220	7.5						
16	220	6.0						
17	220	4.5						
18	250	3.7						
19	250	3.2						
20	260	2.8						
21	310	2.7						
22	340	2.8						
23	330	3.1						

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 41

Akita, Japan (39.7°N, 140.1°E) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	340	3.2					2.3	
01	340	3.2					2.5	
02	320	3.2					2.5	
03	300	3.3					2.5	
04	280	3.2					2.5	
05	290	3.0					2.4	
06	280	3.0					2.1	
07	250	5.6					2.5	
08	250	7.2						
09	250	8.1						
10	260	8.6						
11	260	8.8						
12	260	8.6						
13	260	8.5						
14	250	7.8					3.2	
15	250	7.6					3.1	
16	240	6.6					2.6	
17	240	5.0					2.5	
18	250	4.0					2.5	
19	250	3.3					2.5	
20	270	3.0					2.5	
21	300	2.7					2.5	
22	360	2.8					2.5	
23	360	3.0					2.2	

Time: 135.0°E.
Sweep: 0.85 Mc to 22.0 Mc in 2 minutes.

Table 42

San Francisco, California (37.4°N, 122.2°W) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	(260)	(3.2)					<2.0	(2.9)
01	250	(3.2)					<2.2	(2.95)
02	(260)	3.4					<1.7	2.9
03	<260	3.3					2.4	3.0
04	(250)	3.3					<1.6	3.0
05	(250)	3.0					<1.6	3.0
06	(260)	(3.0)					<1.7	(2.9)
07	240	(4.3)					<1.6	(3.1)
08	220	(7.1)	230	---	<120	(2.0)	2.0	(3.5)
09	220	8.6	220	---	(110)	(2.8)	3.5	3.5
10	230	8.6	210	(3.9)	(110)	(3.0)		3.3
11	240	9.4	210	(4.2)	(110)	(3.1)	3.3	3.3
12	240	10.0	220	(4.4)	(110)	3.2		3.25
13	240	9.9	220	---	(110)	3.2	(3.6)	3.2
14	230	9.4	220	---	110	3.0	<3.2	3.2
15	220	9.0	220	---	(110)	(2.7)		3.3
16	220	8.7	---	---	<120	(2.1)	2.7	3.4
17	200	7.1					3.0	3.4
18	210	4.9					<3.2	3.3
19	220	3.6					2.6	3.35
20	220	3.0					2.5	3.4
21	250	2.7					(2.4)	3.2
22	260	2.7					2.4	3.05
23	(270)	2.9					<1.7	2.85

Time: 120.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 13.5 seconds.

Table 43

Tokyo, Japan (35.7°N, 139.5°E) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	3.1						2.8
01	290	3.2						2.8
02	280	3.3						2.9
03	270	3.2					2.2	2.9
04	240	3.2					2.1	3.0
05	270	2.9						2.9
06	270	3.1						3.0
07	240	6.1	---	---	150	1.7		3.35
08	230	7.7	230	3.1	120	2.4	3.1	3.4
09	230	8.9	230	4.0	110	2.9	3.3	3.4
10	240	9.1	230	4.4	110	3.0	3.8	3.3
11	240	9.5	230	4.5	110	3.2	3.8	3.3
12	240	9.3	230	4.6	110	3.3	4.0	3.3
13	240	9.0	230	4.5	110	3.2	3.6	3.3
14	240	8.4	230	4.0	110	3.0	3.6	3.35
15	230	8.0	230	---	120	2.6	3.0	3.4
16	230	7.1	---	---	---	---	2.7	3.4
17	210	5.6					1.8	3.3
18	230	4.7						3.2
19	240	4.1						3.2
20	250	3.4						3.2
21	260	3.0						3.0
22	290	2.9						2.8
23	320	3.0						2.75

Time: 135.0°E.
Sweep: 1.0 Mc to 17.2 Mc in 2 minutes.

Table 44

Yamagawa, Japan (31.2°N, 130.6°E) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	320	3.3						
01	300	3.4						
02	280	3.3						
03	280	3.2						
04	260	3.4						
05	260	3.0						
06	300	2.6						
07	260	4.4					2.1	
08	240	7.9						
09	240	9.5						
10	240	10.0						
11	240	10.2					4.8	
12	250	10.5					5.4	
13	250	10.8					5.4	
14	250	10.3					3.7	
15	240	9.9						
16	240	9.2					3.3	
17	220	8.4					3.2	
18	210	7.0					2.3	
19	220	5.8					2.3	
20	230	5.4					2.2	
21	240	5.0						
22	250	4.3						
23	290	3.6						

Time: 135.0°E.
Sweep: 1.0 Mc to 22.0 Mc in 1 minute.

Table 45

Johannesburg, Union of S. Africa (26.2°S, 28.1°E) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	<260	6.0					1.8	2.8
01	<260	5.9						2.9
02	250	5.5						2.9
03	<250	5.0						2.9
04	<240	4.3						2.9
05	260	4.4						2.9
06	250	6.0	240	3.2	120	2.2		3.1
07	290	6.9	220	4.4	110	2.9		2.9
08	330	8.0	210	4.9	110	3.3		2.7
09	350	9.0	210	5.1	110	3.6		2.7
10	350	9.8	210	5.2	110	3.8		2.7
11	350	10.2	200	5.2	110	3.9		2.7
12	350	10.4	200	5.2	110	3.9	4.0	2.7
13	350	10.3	200	5.2	110	---	4.2	2.7
14	350	10.0	210	5.2	110	3.8	4.1	2.7
15	340	9.5	210	5.1	110	3.6	4.0	2.7
16	310	9.6	220	4.8	110	3.3	3.9	2.8
17	300	9.6	220	4.4	110	2.9	3.6	2.8
18	270	9.0	240	3.4	110	2.3	3.0	2.9
19	250	8.9					2.4	2.9
20	<250	8.3						2.9
21	240	7.6						2.9
22	250	6.6						2.8
23	<270	6.3					2.0	2.8

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 46

Capetown, Union of S. Africa (34.2°S, 18.3°E) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	5.1					2.2	2.7
01	280	5.0					2.4	2.7
02	280	4.8					2.1	2.7
03	270	4.7					2.0	2.8
04	<270	4.5					1.8	2.8
05	280	4.3						2.8
06	260	5.6	250	2.7	130	2.0	2.4	3.0
07	280	6.8	230	4.0	120	2.6		2.9
08	320	8.0	220	4.7	110	3.0		2.7
09	340	8.7	220	4.9	110	3.4	3.9	2.6
10	350	9.1	210	5.2	110	3.6	4.4	2.6
11	360	9.5	210	5.2	110	3.8	4.4	2.6
12	360	9.8	210	5.2	110	3.8	4.0	2.6
13	360	10.1	210	5.2	110	3.8	4.2	2.6
14	350	9.7	210	5.2	110	3.8	4.4	2.6
15	350	9.5	210	5.1	110	3.7	4.4	2.7
16	330	9.4	220	4.9	110	3.5	4.1	2.7
17	320	9.0	220	4.7	110	3.2	3.7	2.8
18	290	8.8	220	4.2	110	2.8	3.4	2.8
19	270	8.3	240	3.4	120	2.2	2.9	2.9
20	240	7.8			---	---	2.6	3.0
21	240	7.0					2.6	2.9
22	250	6.2					2.2	2.9
23	260	5.6					2.0	2.8

Time: 30.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 47

Buenos Aires, Argentina (34.5°S, 58.5°W) December 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	9.2					3.6	2.8
01	290	9.2					3.0	2.9
02	280	8.6					3.5	2.9
03	260	8.4					3.1	3.0
04	280	7.8						2.8
05	250	7.6			---	---	2.8	2.8
06	240	8.2	230	---	100	2.7	3.8	2.85
07	300	8.0	210	---	---	---	4.0	2.7
08	300	9.2	210	---	---	---	4.0	2.6
09	360	9.5	200	---	---	---	3.5	2.6
10	400	10.2	200	---	---	---		2.6
11	390	10.8	200	---	---	---		2.7
12	360	11.3	210	5.2	---	---		2.8
13	330	11.6	(210)	---	---	---		2.9
14	310	11.5	210	---	---	---		2.9
15	300	11.5	210	---	---	---		3.0
16	300	10.6	220	---	---	---	4.3	3.0
17	290	10.4	220	---			3.5	3.0
18	280	9.0	230	---			3.0	3.0
19	280	9.4						2.9
20	300	9.2						2.8
21	320	9.4						2.0
22	310	9.2					3.2	2.0
23	310	9.4					3.5	2.8

Time: 60.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 27 seconds.

Table 48

Nairobi, Kenya (1.3°S, 36.8°E) November 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	200	>9.9						(3.35)
01	<250	>9.0						(2.8)
02	260	>0.6						2.9
03	260	8.2						3.0
04	230	7.2						3.1
05	220	6.0						3.2
06	230	5.0						3.2
07	250	>7.0	240	---	120	2.3	2.8	3.25
08	260	8.7	230	4.6	110	3.0		3.2
09	290	9.8	220	5.0	110	3.4		2.9
10	300	>10.1	---	5.0	110	3.6	(4.2)	2.8
11	300	10.8	---	5.1	110	---	(5.3)	2.6
12	340	11.1	---	5.4	110	---		2.7
13	(340)	(11.6)	---	---	(110)	---		(2.6)
14	(340)	(11.9)	---	(5.2)	110	---		(2.6)
15	330	11.8	---	5.0	110	---	(5.2)	2.6
16	330	12.2	220	5.0	110	3.2	3.8	2.6
17	(300)	11.8	240	4.6	120	2.8	3.6	2.7
18	(300)	>11.0	260	---	---	---	3.6	---
19	310	>11.0					2.8	---
20	340	---					2.8	---
21	320	---					(3.1)	
22	260	---					2.6	
23	220	---						---

Time: 45.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 7 seconds.

Table 49

Delhi, India (28.6°N, 77.1°E) August 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(4.8)						3.25
01	280	4.5						3.25
02	(300)	(4.2)						(3.10)
03								
04	280	4.2						3.25
05	280	4.2						3.25
06	280	5.2						3.25
07	240	6.6						3.60
08	260	6.9						3.40
09	280	7.0						3.25
10	320	7.4						3.00
11	320	7.9						3.00
12	320	8.5						3.00
13	320	8.9						3.00
14	320	9.0						3.00
15	320	9.2						3.00
16	280	8.9						3.25
17	280	8.2						3.25
18	280	8.1						3.25
19	280	7.5						3.25
20	240	6.9						3.60
21	280	6.0						3.25
22	290	5.3						3.20
23	280	(5.0)						3.25

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 50

Ahmedabad, India (23.0°N, 72.6°E) August 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.1					3.7	2.95
01	290	3.8					3.7	3.10
02	270	3.7					3.6	3.10
03	290	3.6					3.7	3.10
04	285	3.2					3.8	3.10
05	270	3.0					3.5	3.10
06	245	4.4	---	---	---	1.6	3.5	3.30
07	250	6.5	220	3.8	110	2.3	4.0	3.45
08	265	6.6	210	4.2	110	2.8	5.3	3.40
09	290	7.0	210	4.4	105	3.0	>7.0	3.20
10	315	7.6	210	4.5	105	3.2	6.2	3.00
11	355	8.4	215	4.6	105	3.4	>5.0	2.85
12	355	9.4	230	4.6	105	3.5	4.6	2.90
13	350	10.5	240	4.6	105	3.4	4.6	2.90
14	330	11.0	225	4.5	105	3.3	5.8	2.95
15	310	11.3	215	4.5	105	3.2	5.4	3.05
16	295	10.2	230	4.2	105	2.9	5.1	3.15
17	280	10.4	230	3.9	112	2.5	5.4	3.15
18	260	9.0	240	3.4	---	1.9	4.2	3.15
19	240	8.0					4.2	3.20
20	220	7.2					4.0	3.45
21	230	5.0					4.2	3.20
22	295	4.6					4.0	2.90
23	300	4.1					3.7	2.80

Time: 75.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 51

Calcutta, India (22.9°N, 88.5°E) August 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	5.0					2.0	2.95
01	260	4.5					2.5	3.10
02	230	3.8					2.1	3.10
03	240	3.3					2.9	3.10
04	270	3.0					3.6	3.10
05	270	2.5					4.0	3.05
06	240	4.2			---	---	3.6	3.20
07	260	6.8	220	3.8	105	2.6	4.0	3.10
08	290	7.5	205	4.2	100	2.8	5.4	<3.05
09	310	9.1	200	4.4	100	3.2	4.5	2.90
10	350	10.0	190	4.6	100	3.5	5.2	2.80
11	350	11.0	185	4.7	100	3.7	5.2	2.75
12	350	11.6	180	4.9	100	3.8	5.0	2.80
13	350	11.8	190	4.7	100	3.7	4.5	2.75
14	330	12.0	200	4.6	100	3.6	4.3	2.85
15	320	11.8	200	4.5	100	3.4	4.0	2.95
16	300	11.5	205	4.4	100	3.1	4.4	2.95
17	280	11.4	215	4.0	100	3.0	3.8	3.05
18	260	11.0	215	3.6	105	2.6	4.6	3.15
19	230	10.1					3.7	3.20
20	200	9.0					2.6	3.25
21	235	7.0					2.1	3.15
22	270	5.5					2.1	3.00
23	265	4.8					2.0	3.00

Time: 90.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 52

Bombay, India (19.0°N, 73.0°E) August 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06:30	270	4.4						3.35
07	300	5.1						3.10
08:30	300	6.2						3.10
09	330	6.8						2.95
10	360	7.4						2.80
11	390	8.1						2.65
12	420	9.1						2.55
13	420	9.7						2.55
14	420	10.0						2.55
15	(420)	10.1						(2.55)
16	390	10.0						2.65
17	390	9.4						2.65
18	390	9.2						2.65
19	360	8.2						2.80
20	(300)	(7.1)						(3.10)
21	300	5.8						3.10
22	270	4.7						3.35
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 53

Madras, India (13.0°N, 80.2°E) August 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	320	5.8						3.00
07	360	7.4						2.80
08	400	8.1						2.60
09	450	7.9						2.45
10	480	7.3						2.30
11	480	7.4						2.30
12	480	7.7						2.30
13	480	7.9						2.30
14	480	8.5						2.30
15	480	>8.8						2.30
16	420	9.3						2.55
17	400	10.5						2.60
18	360	10.2						2.80
19	360	8.7						2.80
20	360	>7.5						2.80
21	320	>6.0						3.00
22	---	---						----
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 54

Tiruchy, India (10.8°N, 78.8°E) August 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	300	5.4						3.10
07	320	7.3						3.00
08	360	8.0						2.80
09	400	7.6						2.60
10	440	7.5						2.50
11	440	7.6						2.50
12	440	7.6						2.50
13	440	7.8						2.50
14	440	8.4						2.50
15	400	8.9						2.60
16	400	9.3						2.60
17	360	9.7						2.80
18	360	>9.2						2.80
19	320	8.5						3.00
20	320	7.5						3.00
21	320	6.5						3.00
21.30	280	6.0						3.25
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 55

Godhavn, Greenland (69.2°N, 53.5°W) July 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(4.0)	250	---	---	1.4	1.7	3.2
01	250	(4.0)	250	---	---	---	<1.7	(3.2)
02	260	(4.0)	240	---	---	---	2.7	(3.3)
03	(280)	(3.8)	230	---	120	(1.7)	2.3	---
04	(330)	(3.9)	220	(3.0)	120	(1.8)	<2.4	---
05	(300)	(4.2)	210	(3.3)	110	2.0	3.6	---
06	(360)	(4.0)	210	(3.6)	110	2.2	3.8	---
07	470	(4.4)	200	(3.7)	100	2.4	3.7	(2.5)
08	(390)	4.6	210	(4.0)	100	2.6	3.7	(2.7)
09	380	(4.7)	210	(4.0)	100	2.8	3.8	(3.1)
10	400	(4.7)	210	4.1	100	2.8	3.6	(3.0)
11	400	(4.9)	200	4.1	100	2.9	3.0	3.0
12	380	(4.9)	200	4.1	100	2.9	3.1	(3.0)
13	390	(5.0)	200	4.2	100	2.9	3.2	(2.9)
14	(350)	(5.0)	200	4.2	100	2.8	4.6	(3.1)
15	360	(4.9)	200	4.1	100	2.8	5.8	3.1
16	360	(4.8)	200	4.0	100	2.7	6.2	(3.0)
17	360	(4.8)	200	3.9	(110)	2.5	5.0	(3.0)
18	360	(4.6)	210	3.8	(110)	2.4	5.2	(2.9)
19	340	(4.7)	220	3.6	(110)	2.2	4.5	(3.0)
20	300	(4.6)	220	3.4	(110)	1.9	5.2	(3.1)
21	(290)	(4.5)	240	(3.2)	(120)	1.8	4.0	3.1
22	(260)	(4.2)	240	---	120	(1.6)	<2.4	3.1
23	(260)	(3.9)	240	---	(120)	1.5	1.7	(3.1)

Time: 45.0°W.
Sweep: 1.0 Mc to 25.0 Mc in 16.2 seconds.

Table 56

Delhi, India (28.6°N, 77.1°E) July 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	280	(5.6)						3.25
01	300	(5.4)						3.10
02	---	(5.7)						----
03								
04	280	(4.8)						3.25
05	280	4.5						3.25
06	280	5.2						3.25
07	280	6.4						3.25
08	300	6.9						3.10
09	320	7.4						3.00
10	330	7.8						3.00
11	320	8.4						3.00
12	320	8.5						3.00
13	320	8.5						3.00
14	320	8.5						3.00
15	320	8.7						3.00
16	320	8.4						3.00
17	290	8.0						3.20
18	280	7.8						3.25
19	280	7.4						3.25
20	280	7.1						3.25
21	290	>6.5						3.20
22	300	6.0						3.10
23	300	5.9						3.10

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 57

Ahmedabad, India (23.0°N, 72.6°E) July 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	300	4.0					4.2	3.00
01	290	3.8					4.0	3.10
02	290	3.6					3.8	3.15
03	300	3.3					3.4	3.15
04	300	3.1					3.6	3.20
05	290	3.0					3.6	3.20
06	250	4.4	240	(3.3)	---	1.7	3.7	3.35
07	275	5.7	220	3.9	113	2.4	3.9	3.30
08	280	6.6	215	4.2	110	2.8	4.3	3.30
09	320	6.8	230	4.4	107	3.0	4.4	3.10
10	335	7.3	210	4.5	107	3.2	5.8	3.00
11	370	7.9	205	4.6	107	3.4	7.0	2.85
12	370	8.3	210	4.6	107	3.5	7.0	2.75
13	360	9.2	210	4.6	107	3.5	6.0	2.80
14	340	9.2	220	4.6	110	3.4	6.0	2.90
15	330	9.1	215	4.4	107	3.3	6.2	2.90
16	320	9.2	230	4.2	107	3.0	6.2	2.85
17	310	8.6	230	4.0	111	2.6	4.0	3.00
18	300	8.3	240	3.6	120	2.2	5.2	3.05
19	250	7.6					4.2	3.15
20	240	6.9					5.0	3.20
21	230	6.0					4.0	3.20
22	255	5.2					4.0	3.10
23	300	4.5					4.2	2.90

Time: 75.0°E.
Sweep: 0.6 Mc to 25.0 Mc in 5 minutes, automatic operation.

Table 58

Calcutta, India (22.9°N, 88.5°E) July 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	275	4.9					2.2	3.10
01	270	4.5						3.10
02	250	4.3					2.2	3.10
03	250	3.8					1.8	3.10
04	250	3.2					2.8	3.10
05	250	3.0						3.10
06	240	4.5			120	2.0	3.1	3.10
07	265	6.0	220	3.2	105	2.4	3.6	3.10
08	310	7.3	210	4.1	100	3.0	3.9	2.95
09	320	8.3	205	4.6	100	3.4	4.8	2.85
10	340	9.5	200	5.0	100	3.4	5.4	2.80
11	340	10.5	200	5.1	100	3.4	5.3	2.65
12	340	11.0	195	5.0	100	3.5	5.2	2.65
13	345	11.1	200	4.9	100	3.5	4.9	2.75
14	330	11.3	200	4.7	100	3.3	4.6	2.85
15	310	11.2	---	4.4	100	3.0	5.6	2.95
16	300	11.0	---	4.3	105	3.0	5.1	3.00
17	295	10.5	210	4.0	105	2.7	4.8	3.05
18	280	10.0	220	3.5	120	2.0	5.0	3.10
19	245	9.4					3.6	3.10
20	220	8.5					3.2	3.25
21	220	7.2					2.6	3.35
22	250	6.1					2.7	3.20
23	260	5.2					2.4	3.10

Time: 90.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 59

Bombay, India (19.0°N, 73.0°E) July 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06:30	270	4.5						3.35
07	300	5.0						3.10
08:30	330	6.0						2.95
09	330	6.6						2.95
10	360	7.4						2.80
11	390	8.1						2.65
12	420	8.9						2.55
13	450	9.6						2.45
14	480	9.8						2.30
15	---	---						----
16	(450)	(9.1)						(2.45)
17	(420)	(8.4)						(2.55)
18	390	9.4						2.65
19	360	8.2						2.80
20	330	6.2						2.95
21	300	5.6						3.10
22	300	4.6						3.10
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 60

Madras, India (13.0°N, 80.2°E) July 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	320	5.9						3.00
07	360	7.1						2.80
08	400	7.6						2.60
09	440	>7.4						2.50
10	450	7.8						2.45
11	470	7.1						2.35
12	480	7.1						2.30
13	480	7.7						2.30
14	480	>8.0						2.30
15	460	8.1						2.35
16	470	8.6						2.35
17	410	8.8						2.60
18	360	>8.8						2.80
19	360	>8.5						2.80
20	320	7.5						3.00
21	300	6.0						3.10
22								
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 61

Tiruchy, India (10.0°N, 70.8°E) July 1955

Time	*	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05								
06	320	5.1						3.00
07	320	6.8						2.80
08	360	7.3						2.80
09	400	7.3						2.60
10	440	7.2						2.50
11	440	7.2						2.50
12	440	7.1						2.50
13	440	7.5						2.50
14	440	7.9						2.50
15	440	8.2						2.50
16	400	8.3						2.60
17	400	8.5						2.60
18	360	8.5						2.80
19	360	8.5						2.80
20	320	7.2						3.00
21	320	6.4						3.00
21:30	320	6.0						3.00
23								

Time: 75.0°E.
Sweep: 1.5 Mc to 18.0 Mc in 5 minutes, manual operation.
*Height at 0.83 foF2.

Table 62

Townsville, Australia (19.3°S, 146.7°E) April 1955*

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	250	(3.7)					3.5	(3.2)
01	250	3.4					3.1	(3.2)
02	250	3.3					3.1	(3.2)
03	230	3.3					2.8	(3.4)
04	250	3.0					2.6	(3.3)
05	270	2.8					2.5	(3.1)
06	250	3.0					2.3	3.3
07	230	>5.2	---	---	120	2.0	3.0	3.6
08	(250)	6.6	230	3.9	100	2.5	3.5	3.55
09	250	6.8	220	4.2	100	2.9	4.3	3.5
10	260	8.0	210	4.3	100	3.1	5.4	3.4
11	250	8.4	210	4.4	100	3.3	4.4	3.4
12	250	7.6	200	4.4	100	3.3	4.4	3.5
13	275	7.0	205	4.4	100	3.3	4.3	3.25
14	285	7.6	---	4.4	100	3.2	4.8	3.25
15	260	8.2	220	4.2	100	3.0	4.4	3.4
16	250	8.3	---	4.0	100	2.8	4.6	3.45
17	230	>7.4	---	---	100	2.2	4.7	(3.65)
18	220	6.4			---	---	4.2	(3.5)
19	235	4.7					3.4	3.3
20	245	4.2					3.2	3.2
21	(250)	3.6					3.1	3.1
22	(280)	3.8					3.5	(3.0)
23	260	3.8					3.0	(3.2)

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 secon
*Data observed from April 1 to 19, inclusive.

Table 63

Canberra, Australia (35.3°S, 149.0°E) April 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	---	3.0					3.1	3.1
01	---	3.7					3.1	3.1
02	---	3.7					1.5	3.1
03	---	3.7						3.2
04	<230	3.7						3.3
05	(200)	3.3						3.45
06	---	2.7						3.1
07	220	4.6			---	1.9		3.6
08	230	5.5	220	(3.6)	100	2.4		3.6
09	260	6.0	210	(4.0)	100	2.7	3.2	3.5
10	250	6.0	210	4.2	100	2.9	3.7	3.5
11	265	6.5	200	4.2	100	3.0	3.6	3.5
12	260	6.6	200	4.3	100	3.1	3.8	3.4
13	260	6.6	200	4.2	100	3.1	3.9	3.4
14	250	6.8	200	(4.1)	100	3.0	3.4	3.4
15	250	6.0	210	(4.0)	100	2.8	2.8	3.5
16	230	6.6	220	(3.5)	100	2.5	3.2	3.5
17	220	6.2			---	(1.9)	2.8	3.5
18	210	5.2					2.4	3.4
19	---	4.3					1.9	3.2
20	---	4.0					2.1	3.2
21	---	4.0						3.1
22	---	3.6					2.0	3.2
23	---	3.8					3.2	3.1

Time: 150.0°E.
Sweep: 1.0 Mc to 16.0 Mc in 1 minute 55 seconds.

Table 64

Hobart, Tasmania (42.9°S, 147.3°E) April 1955

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00	270	2.2						2.9
01	270	2.0						2.9
02	270	2.3						3.0
03	260	2.3						3.0
04	260	2.1						3.0
05	250	2.1						3.1
06	280	2.0						3.1
07	240	3.5			120	1.5		3.1
08	230	4.5			100	2.0		3.2
09	210	4.9	---	---	100	2.5		3.2
10	210	5.2	---	---	100	2.7		3.1
11	200	5.9	200	4.0	100	2.8		3.15
12	200	6.4	200	4.0	100	2.9		3.1
13	200	6.5	200	4.0	100	2.9		3.2
14	220	6.4	210	4.0	100	2.8		3.2
15	220	6.2	---	---	100	2.5		3.1
16	230	5.6			100	2.2		3.2
17	230	5.5			100	1.7		3.2
18	230	4.0			---	---		3.1
19	240	4.2						3.0
20	250	3.5						3.0
21	250	3.0						3.0
22	270	2.5						3.0
23	280	2.4						3.0

Time: 150.0°E.
Sweep: 1.0 Mc to 13.0 Mc in 1 minute 55 seconds.

Table 65*

Campbell I. (52.5°S, 169.2°E) February 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	260	(4.1)			---	2.1	2.9	---
06								
07	310	5.0	250	4.2	120	2.7	3.2	3.0
08	340	5.4	240	4.4	110	3.1	3.4	3.0
09	350	5.6	230	4.5	120	3.3	3.5	3.0
10	350	6.2	230	4.6	110	3.4	3.8	3.0
11	330	6.4	220	4.7	110	3.5	3.9	3.0
12	330	6.6	210	4.7	110	3.6	4.0	2.9
13	350	6.6	230	4.7	110	3.6	3.8	2.9
14	340	6.8	230	4.6	110	3.4	3.7	2.9
15	320	7.0	240	4.5	110	3.3		2.9
16	310	6.8	230	4.5	120	3.0		3.0
17	300	7.0	250	---	120	2.7	3.0	2.9
18	290	6.8	250	---	140	2.4	3.2	2.95
19	260	7.0			---	2.0	3.6	3.0
20								
21	300	(6.5)					2.6	---
22								
23	300	---					3.3	---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 66*

Campbell I. (52.5°S, 169.2°E) January 1951

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	250	4.4	---	---	120	2.4	3.6	3.0
06								
07	350	5.4	240	4.3	110	3.1	3.6	2.9
08	350	5.7	220	4.5	110	3.2	4.4	3.0
09	350	6.2	220	4.6	110	3.4	4.2	3.0
10	350	6.4	220	4.8	110	3.6	4.2	3.0
11	350	6.6	220	4.8	110	3.7	4.1	3.0
12	350	6.5	210	4.9	110	3.8	4.2	2.9
13	350	6.3	220	4.9	110	3.7	4.2	2.95
14	350	6.5	210	4.8	110	3.6	4.0	2.9
15	350	6.6	220	4.7	110	3.5	3.8	2.9
16	340	6.8	230	4.5	110	3.3	3.3	2.9
17	310	6.8	240	4.3	120	3.0		3.0
18	290	6.7	250	3.8	130	2.7	3.0	3.0
19	260	6.8	260	---	140	2.2		2.9
20								
21	260	7.1						2.7
22								
23	280	6.2					2.8	2.8

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 67*

Campbell I. (52.5°S, 169.2°E) December 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	250	4.9	---	---	120	2.6	3.5	3.1
06								
07	320	5.7	240	4.6	110	3.2	3.4	3.0
08	350	6.0	230	4.7	110	3.4	3.7	3.0
09	340	6.3	220	4.7	110	3.5	4.1	2.95
10	350	6.4	210	4.8	110	3.6	4.2	3.0
11	350	6.4	220	4.9	110	3.7	4.1	2.9
12	350	6.6	210	4.9	110	3.7	4.0	2.9
13	350	6.4	210	4.9	110	3.7	4.1	2.9
14	350	6.6	220	4.8	110	3.6	4.0	2.9
15	340	6.9	230	4.7	110	3.5		2.9
16	330	6.8	230	4.6	110	3.3		2.9
17	300	7.1	240	4.4	120	3.0	3.2	2.9
18	300	7.3	250	3.9	120	2.6	3.2	3.0
19	250	7.6	---	---	140	2.2	3.6	2.9
20								
21	260	7.0					2.8	(2.8)
22								
23	290	6.0					4.0	(2.8)

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 68*

Campbell I. (52.5°S, 169.2°E) November 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	260	4.6	250	---	120	2.4	3.2	3.1
06								
07	360	5.4	240	4.5	110	3.1		3.0
08	400	5.5	230	4.6	110	3.3		2.8
09	360	6.0	230	4.6	110	3.5		2.9
10	360	6.4	230	4.7	110	3.6		2.9
11	360	6.4	220	4.8	110	3.6		2.9
12	350	6.5	220	4.8	110	3.6	3.8	2.9
13	340	6.8	220	4.8	110	3.6		2.9
14	330	6.6	220	4.6	110	3.5		2.9
15	320	7.0	230	4.6	110	3.3		2.9
16	310	7.1	240	4.5	110	3.1		2.9
17	300	7.1	250	4.1	120	2.8		3.0
18	280	7.2	250	---	140	2.4	2.8	2.9
19	260	7.3	---	---	140	2.0	2.9	2.9
20								
21	280	6.7					4.0	2.9
22								
23	290	5.6					4.2	2.8

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 69*

Campbell I. (52.5°S, 169.2°E) September 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	300	2.7						(2.85)
06								
07	250	4.6			120	2.4		3.3
08	250	5.0	230	---	120	2.8		3.1
09	300	5.3	230	4.4	120	3.0		3.2
10	310	5.7	220	4.5	120	3.2		3.1
11	320	6.0	220	4.6	120	3.3		3.1
12	300	6.1	230	4.5	120	3.4		3.1
13	300	6.4	230	4.5	120	3.3		3.1
14	300	6.3	230	4.4	120	3.2		3.1
15	280	6.2	230	4.1	120	2.9		3.15
16	270	6.2	240	---	120	2.6		3.1
17	260	6.2			---	2.0		3.1
18	250	5.5						3.0
19	270	5.2						2.9
20								
21	300	4.2					2.2	2.9
22								
23	300	3.3					3.7	(2.7)

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 70*

Campbell I. (52.5°S, 169.2°E) August 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	(290)	(2.9)						(2.75)
06								
07	250	4.0			120	1.9	2.6	2.9
08	250	5.0	230	---	120	2.3	2.6	3.2
09	250	5.5	230	---	120	2.6	3.2	3.2
10	250	5.8	230	4.0	120	2.9	3.4	3.2
11	270	6.5	230	4.2	120	3.0	3.8	3.2
12	270	6.6	240	4.2	120	3.1		3.1
13	270	6.6	230	4.2	120	3.1	3.5	3.1
14	260	6.8	240	4.0	120	2.8		3.2
15	250	6.8	240	4.0	120	2.6		3.2
16	250	6.6	---	---	140	2.2		3.2
17	250	5.8			---	1.6		3.1
18	250	5.3						3.0
19	250	4.5						2.9
20								
21	290	3.9					3.3	(2.8)
22								
23	320	3.2					3.2	(2.7)

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 71*

Campbell I. (52.5°S, 169.2°E) July 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	(290)	(2.9)					2.7	(2.6)
06								
07	280	2.9			---	---		2.7
08	240	4.7			120	1.8	2.1	3.2
09	240	5.8	---	---	110	2.3		3.2
10	250	6.4	220	---	120	2.6		3.3
11	250	7.0	240	3.6	110	2.8		3.2
12	250	7.6	240	3.6	120	2.8		3.2
13	250	7.6	230	3.5	110	2.7		3.3
14	250	7.3	240	3.5	120	2.5		3.2
15	240	7.4	230	3.2	120	2.2		3.2
16	240	6.8	---	---	120	2.0		3.2
17	240	5.6			---	---		3.1
18	250	4.9						3.0
19	250	4.5						2.95
20								
21	320	3.7						(2.9)
22								
23	320	---					2.6	---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

Table 72*

Campbell I. (52.5°S, 169.2°E) June 1950

Time	h'F2	foF2	h'F1	foF1	h'E	foE	fEs	(M3000)F2
00								
01								
02								
03								
04								
05	300	(2.9)					2.8	(2.8)
06								
07	260	(3.2)			---	---		(2.75)
08	250	5.1	---	---	110	2.1		3.1
09	240	6.3	230	4.0	110	2.2		3.2
10	240	7.2	240	3.7	120	2.5		3.2
11	250	8.1	240	3.6	120	2.7		3.1
12	250	8.4	240	3.9	110	2.7		3.2
13	250	8.4	240	3.8	120	2.6		3.2
14	240	8.3	240	3.4	120	2.4		3.1
15	240	8.2	230	3.9	120	2.1		3.15
16	250	7.1	220	3.5	120	2.0		3.1
17	240	6.2			---	---		3.0
18	250	5.2						3.0
19	250	4.6						(2.9)
20								
21	270	---					3.0	---
22								
23	300	---					4.0	---

Time: 165.0°E.
Sweep: 1.0 Mc to 15.0 Mc in 5 minutes, manual operation.
*Observations taken on a 16-hour working schedule.

TABLE 73
IONOSPHERIC DATA

foF2, Mc, April 1956 — 75°W Mean Time

Station Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	F 38	F 38	F 36	F 34	F 37	F 38	47	62	63	68	70	H 70	74	76	76	76	76	74	74	70	70	67	F 66	F 63
02	F 56	F 48	F 48	F 43	F 42	F 33	45	61	F 72	F 71	69	76	78	84	84	87	84	79	88	90	86	72	67	72
03	68	64	66	60	52	44	57	72	86	96	106	110	109	108	109	107	104	100	98	88	U P 80	78	70	68
04	66	64	57	58	53	44	56	76	92	98	107	106	108	113	114	113	115	114	114	103	86	76	76	74
05	72	71	63	62	55	57	58	68	78	86	96	92	97	102	98	92	92	92	90	84	78	F 76	F 68	U F 67
06	U F 67	U F 64	U F 62	F 56	F 50	50	63	76	88	88	96	110	117	113	110	105	100	107	103	100	88	69	76	U S 80
07	68	68	64	57	53	50	58	62	72	78	84	81	92	94	92	93	90	88	92	87	76	69	64	60
08	60	56	55	50	44	43	56	70	86	96	96	97	106	102	103	103	102	101	97	94	83	76	68	66
09	64	F 63	58	57	F 50	F 46	58	80	96	103	110	112	118	115	113	106	107	106	103	98	88	84	F 72	U F 72
10	F 70	F 68	F 58	57	53	50	59	66	76	90	97	98	101	105	I C 105	105	103	100	94	90	80	79	J 80	F 72
11	F 69	F 63	F 62	F 58	U F 54	U F 50	F 64	85	96	101	110	110	111	113	106	113	110	107	102	94	86	82	78	84
12	F 75	F 70	64	60	58	59	70	89	100	107	108	114	113	112	112	109	105	102	102	99	90	88	86	82
13	U S 78	78	70	68	64	65	76	U S 94	109	119	122	120	119	120	118	118	113	108	106	U S 100	93	92	90	88
14	83	75	71	68	68	64	F 76	U S 93	F 104	115	U H 118	H 120	H 121	117	117	116	112	107	104	98	91	86	U F 81	U F 90
15	86	C	C	70	66	F 63	77	95	102	105	120	120	120	120	119	115	115	114	110	106	92	86	86	80
16	72	66	68	67	66	66	76	90	103	110	119	121	120	H 122	124	117	113	110	110	98	88	79	76	76
17	70	63	65	60	62	60	73	92	108	H 111	120	115	119	120	116	115	113	108	109	105	96	88	84	75
18	68	62	U F 58	F 48	J 46	F 45	F 54	F 57	60	62	66	67	69	72	71	71	70	71	73	69	71	F 67	65	U S 60
19	U C 60	F 57	F 56	F 54	F 52	F 47	55	59	61	64	68	73	76	80	79	79	78	78	80	78	U S 72	66	64	F 66
20	F 65	F 62	F 61	F 54	F 51	F 48	59	72	79	82	86	H 87	H 90	90	89	90	88	92	87	94	83	76	68	68
21	66	64	62	58	53	50	53	55	57	54	60	60	62	61	63	70	90	100	97	90	F 68	63	U F 39	29
22	27	U F 31	I C 30	F 28	F 25	F 32	E G 37	E G 41	47	52	E G 47	51	E G 48	58	63	67	70	70	F 69	F 63	63	59	U S 54	U J 46
23	U F 32	U F 24	F 21	F 19	F 19	F 30	44	56	58	62	62	67	68	68	68	70	70	69	70	70	68	68	64	62
24	58	60	61	57	53	51	F 62	78	87	95	95	98	102	103	101	100	98	92	94	96	94	U S 90	U S 82	80
25	76	74	71	68	64	61	69	76	H 82	90	93	95	100	105	103	102	98	95	96	94	88	78	80	71
26	68	67	66	64	59	63	55	64	63	68	75	82	84	86	83	84	78	78	100	94	U R 35	B	B	B
27	B	B	B	B	B	F 28	B	E G 37	E G 40	E G 41	E G 42	E G 44	E G 45	E G 45	E G 44	56	62	F 56	68	F 58	U F 50	U B 30	I F 30	F 31
28	U F 29	U F 27	F 33	F 29	F 25	F 31	E G 43	46	50	51	52	52	53	53	55	56	58	66	66	68	64	F 45	U F 42	49
29	36	F 27	25	F 23	F 22	F 28	F 36	U P 45	64	64	64	69	70	H 74	74	76	76	77	77	76	U S 74	U F 71	U F 72	57
30	F 60	U P 52	U P 38	U P 38	U F 37	F 42	45	F 50	52	60	72	80	86	86	83	88	92	89	86	84	77	68	66	F 66
MED	67	63	61	57	53	49	58	69	78	87	94	94	98	102	100	96	95	94	95	92	82	76	70	68
NO	29	28	28	29	29	30	29	30	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29

TABLE 74

IONOSPHERIC DATA

foF2, Mc, April 1956 — 75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	0030	0130	0230	0330	0430	0530	0630	0730	0830	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2030	2130	2230	2300
01	40	F 37	F 34	35	38	39	56	64	67	70	71	74	73	75	76	76	75	72	75	68	67	F 64	F 66	F 60
02	F 50	F 49	J 45	F 42	F 37	F 37	52	68	75	74	75	80	80	84	86	88	82	86	U P 92	88	78	72	69	66
03	64	64	65	56	48	44	62	82	91	101	117	106	110	106	106	108	103	100	94	80	78	U S 70	68	67
04	66	69	58	56	47	47	66	82	94	102	112	108	114	113	116	113	115	110	108	93	84	78	74	76
05	72	67	64	57	56	56	64	72	81	93	94	92	98	100	94	94	93	87	87	77	75	F 72	F 67	U F 65
06	U F 66	U F 64	U F 58	54	48	52	73	78	90	90	110	118	117	110	107	104	103	105	97	U S 96	U S 76	72	U S 78	68
07	69	64	59	55	49	52	66	72	74	80	83	85	92	93	93	93	90	88	92	84	73	66	62	58
08	58	55	53	47	43	48	68	79	92	94	94	101	103	105	105	100	102	97	94	88	76	69	F 68	F 67
09	64	60	57	53	F 46	49	72	88	98	107	108	113	116	113	107	108	117	103	103	90	86	80	F 70	U J 70
10	F 70	F 65	58	55	54	52	66	71	84	90	103	99	106	I C 106	107	102	100	96	92	84	79	79	F 73	F 70
11	F 66	F 60	F 58	F 56	U F 54	F 58	74	90	98	104	110	109	113	109	109	114	107	117	98	92	87	82	82	J 80
12	70	68	62	58	57	60	79	98	98	107	108	114	109	111	110	108	101	100	99	98	88	86	U S 85	79
13	76	73	69	66	64	70	88	98	112	120	120	119	120	118	118	115	111	107	103	U S 94	92	90	U S 90	86
14	78	72	68	68	65	68	85	100	108	118	118	118	121	119	117	113	110	106	103	94	90	84	U J 81	U S 86
15	84	C	C	66	64	68	84	102	107	114	120	120	120	120	115	125	114	112	108	96	88	86	88	71
16	68	67	66	66	66	70	85	93	106	116	120	122	121	122	122	114	110	110	106	90	85	75	76	72
17	64	66	64	62	59	67	82	104	110	115	120	116	120	120	115	116	110	109	109	102	94	85	U J 79	70
18	65	F 61	J 53	F 43	F 45	F 48	F 55	57	62	64	65	67	72	72	70	71	I C 71	71	U S 70	69	68	64	65	U S 60
19	F 59	F 56	F 56	F 54	U F 50	53	57	61	62	68	70	75	78	78	79	78	80	80	80	77	70	64	U F 65	F 64
20	F 64	F 64	F 57	F 53	F 48	52	65	76	81	84	86	89	90	90	89	90	90	93	94	92	79	73	68	66
21	64	62	60	55	52	52	52	54	55	61	62	60	63	61	67	78	95	98	97	76	71	J 62	U J 29	U J 29
22	U J 31	U F 29	U F 29	F 25	F 26	F 34	F 40	E G 42	E G 44	49	E G 47	E G 48	56	63	67	68	70	66	65	63	62	57	J 50	U F 38
23	F 27	F 22	F 20	F 19	F 22	F 38	52	58	60	60	63	64	68	68	70	70	69	70	70	70	67	67	64	58
24	60	59	60	56	51	55	71	83	90	96	98	100	102	102	102	100	95	96	U S 96	U S 94	U S 92	U S 83	78	76
25	76	72	70	67	60	64	74	80	85	94	92	96	103	92	102	99	96	96	94	94	83	80	76	71
26	76	67	64	59	60	57	60	61	64	70	80	84	84	84	84	82	77	90	92	F 58	B	B	B	B
27	B	B	B	B	F 26	B	B	E G 38	E G 41	E G 41	E G 42	E G 45	E G 46	E G 45	47	57	60	J 61	66	64	U F 45	U F 31	U J 30	28
28	U F 27	F 31	F 30	F 27	F 25	37	E G 44	48	50	51	54	53	54	55	55	61	63	63	68	67	54	36	F 48	49
29	F 28	27	F 23	F 23	F 25	34	U P 42	54	69	65	62	70	72	76	74	75	76	76	77	74	F 72	U F 72	F 62	57
30	U F 56	U P 43	U F 37	U F 37	F 43	45	48	G 50	57	68	78	82	88	85	84	92	89	88	86	79	71	67	V 70	63
MED	64	63	58	55	48	52	66	74	82	90	93	94	100	96	98	96	95	96	94	86	78	72	69	67
NO	29	28	28	29	30	29	29	30	30	30	30	30	30	30	30	30	30	30	30	30	29	29	29	29

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 75
IONOSPHERIC DATA

foFl, Mc, April 1956 — 75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							Q	L	L	460	490	H 500	H 520	H 520	H 520	470	450	L	L					
02								L	L	L	U L 450	480	500	520	H 530	500	H 480	L	L					
03							Q	Q	L	L	L	L	L	L	L	L	L	L	Q					
04							Q	Q	L	L	L	L	L	L	L	L	L	Q	Q					
05								L	L	L	L	L	L	L	L	L	L	L	Q					
06								Q	L	L	L	L	L	L	L	L	L	L	Q					
07							L	L	L	L	L	L	L	L	L	L	L	L	Q					
08							Q	Q	L	L	U L 540	L	L	L	L	L	L	A	Q					
09							Q	Q	L	L	L	H 560	L	L	L	L	L	L	Q					
10							Q	L	L	L	L	L	U L 520	L	C	L	L	L	Q					
11							Q	L	L	L	L	H 580	590	L	560	L	L	L	Q					
12							L	L	L	L	L	U L 550	U L 550	U L 540	L	L	L	L	Q					
13							A	A	A	L	L	L	L	L	L	L	L	L	Q					
14							Q	Q	L	L	A	500	L	H 520	L	L	L	Q	Q					
15							Q	A	A	L	A	A	A	L	L	A	A	L	Q					
16								Q	L	L	L	L	L	H 500	L	L	L	L	Q					
17							Q	L	L	L	L	560	520	L	L	L	L	L	Q					
18							Q	L	500	520	H 530	H 540	H 540	F 540	F 560	540	500	440						
19							Q	L	U L 460	H 540	H 560	H 560	H 560	H 580	560	L	U L 520	L	L					
20							Q	L	L	L	H 580	H 550	H 560	600	590	H 560	L	L	L					
21							L	420	490	470	H 500	510	500	500	490	490	500	470	L					
22							370	410	430	460	470	H 480	H 480	500	500	510	490	L	L	Q				
23							L	H 420	H 470	H 480	490	H 500	520	540	530	500	L	L	L					
24							L	L	L	L	480	L	L	A	H 520	L	L	L						
25								L	L	L	L	L	L	580	L	L	L	L	L					
26							Q	L	480	480	H 540	H 560	540	U L 580	510	520	500	440	L					
27								370	H 400	H 410	H 420	H 440	H 450	450	440	440	450	420	L					
28						Q	430	U L 440	440	460	470	480	470	500	480	460	450	420	L					
29							U L 330	380	420	490	490	500	500	500	520	H 500	470	L	L					
30							B	440	450	490	530	510	U L 520	H 540	540	L	L	L	L					
MED								420	460	480	490	510	520	520	520	500	480	440						
NO							3	7	10	11	15	18	17	17	15	11	10	5						

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 76
IONOSPHERIC DATA

foE, Mc, April 1956 — 75° W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							190	A	H 310	310	H 340	H 350	350	H 350	340	H 320	300	260	190					
02								H 230	H 280	310	340	U H 340	360	360	350	340	310	270	H 200					
03							A	A	A	300	A	350	A	340	340	330	H 310	270	190					
04							A	A	A	A	H 340	360	A	A	350	340	310	A	A					
05								A	270	310	340	A	A	A	A	A	300	280	190					
06								250	300	320	350	350	360	360	350	340	320	270	A					
07							170	250	290	320	320	A	A	A	360	340	U P 310	270	A					
08							A	250	310	U A 330	I A 340	350	360	350	H 360	H 350	320	280	A					
09							H 200	260	A	H 330	350	H 380	H 390	380	360	I A 340	H 330	H 280	A					
10							A	H 260	300	340	350	370	380	370	I C 360	360	320	280	A					
11							180	U A 260	300	350	A	A	A	U A 380	H 370	350	320	290	210					
12							170	260	A	A	A	H 360	U A 370	U H 370	370	350	H 340	H 290	220					
13							A	U A 270	A	A	H 350	A	380	380	370	360	H 330	280	U A 200					
14							H 190	H 270	310	U H 340	H 360	H 380	380	H 380	H 360	H 350	330	280	U A 200					
15							U P 180	H 270	H 320	340	370	380	380	360	360	350	320	300	A					
16								H 260	310	U R 340	R	R	U H 370	H 380	380	H 360	340	H 290	210					
17							180	260	300	330	H 340	350	H 340	U P 340	A	A	A	H 290	A					
18							200	I A 250	300	H 320	U A 330	U R 310	R	R	380	360	H 330	280						
19							H 190	H 280	H 310	H 310	U A 330	R	R	R	R	350	320	280	A					
20							U A 210	U H 270	U A 320	H 340	H 350	H 350	350	360	360	360	320	280	A					
21							U P 210	I A 250	290	320	U A 330	I A 350	370	370	370	I R 350	330	290	210					
22							U R 170	H 280	H 320	350	350	370	U B 380	I B 380	370	350	330	290	U A 230	160				
23							H 190	H 270	320	340	370	U A 380	U A 360	I A 350	340	A	320	290	210					
24							210	280	310	340	360	380	380	380	380	350	310	280	230					
25								280	310	330	380	A	A	A	H 370	370	330	290	H 240					
26							210	H 260	300	320	340	360	350	340	U A 320	350	A	A	U A 220					
27								B	U A 290	320	340	330	U P 330	320	330	330	320	280	220	170				
28						160	250	260	300	310	U R 340	U P 340	U P 340	350	380	380	U P 310	270	230					
29							190	270	300	320	340	340	370	U P 360	350	350	320	280	230					
30							B	270	300	330	U P 340	350	340	350	I A 330	U A 310	I A 300	F 280	220					
MED							190	260	300	330	340	350	360	360	360	350	320	280	210					
NO						1	18	25	25	27	26	23	22	24	27	27	28	28	19	2				

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 77
IONOSPHERIC DATA

fEs, Mc, April 1956 — 75°W Mean Time

Station Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	S	E	S	E	E	E	S	32	36	33	32	32	G	G	G	32	G	G	G	S	S	S	S	S
02	S	E	E	E	E	45	16	G	32	36	G	G	G	40	G	G	G	G	G	12	12	S	S	S
03	S	S	S	S	11	S	18	32	36	32	41	33	38	36	38	G	G	28	22	12	S	S	S	S
04	S	S	E	S	E	S	17	33	36	40	30	G	39	38	G	37	34	28	21	S	27	S	S	S
05	S	S	S	S	E	S	27	33	37	39	G	36	38	39	36	34	G	G	G	S	S	S	S	S
06	S	E	E	E	E	S	S	G	37	G	G	G	G	G	G	G	G	G	20	S	S	S	S	S
07	S	S	S	23	S	S	G	G	38	40	G	35	36	39	39	38	G	30	21	S	S	S	S	S
08	S	S	S	S	S	E	18	G	40	39	42	G	G	G	38	37	G	66	Y 32	S	41	S	S	S
09	S	E	E	E	E	S	33	G	40	34	68	G	G	G	183	43	G	G	35	S	S	S	S	S
10	S	S	S	S	S	S	18	27	40	44	40	G	G	G	C	G	G	33	22	S	S	E	25	S
11	S	21	29	S	S	S	43	45	48	75	52	40	40	41	G	50	50	31	23	12	S	S	S	S
12	29	E	28	24	S	S	29	37	38	44	49	40	40	G	G	G	G	33	33	S	S	S	S	S
13	S	S	S	S	E	S	33	42	50	41	64	72	42	48	38	39	54	47	43	31	44	52	S	32
14	Y 24	S	S	28	S	S	G	G	G	G	53	G	44	47	55	47	44	41	H 49	Y 27	S	36	35	56
15	50	C	C	S	S	18	G	52	49	54	92	90	110	170	125	90	113	31	40	31	45	30	S	24
16	21	29	23	33	52	44	72	G	G	G	G	41	G	G	G	39	G	54	36	43	S	S	S	30
17	28	S	S	S	S	S	G	28	44	47	50	40	38	49	52	42	33	G	32	S	S	S	S	S
18	24	39	23	S	S	S	G	35	41	35	34	G	G	G	G	G	35	30	22	18	S	S	S	S
19	S	S	S	S	S	S	G	78	G	31	34	G	G	G	G	G	G	30	23	S	S	S	S	S
20	S	S	S	Y 32	23	29	21	G	31	G	G	G	36	G	G	G	33	29	22	27	31	S	S	S
21	S	S	S	S	S	30	G	28	34	44	34	38	G	G	G	G	G	G	G	16	32	33	S	S
22	70	33	C	18	S	F 17	25	G	G	G	G	G	G	B	G	G	G	G	31	S	S	S	S	S
23	S	E	E	E	S	S	23	G	33	40	40	40	37	40	G	36	34	42	38	39	18	S	S	S
24	S	S	E	S	S	26	25	38	42	G	37	G	G	86	G	G	G	G	G	S	S	S	44	S
25	S	S	S	S	S	S	B	G	43	36	37	36	36	40	G	45	G	G	G	28	29	26	24	S
26	S	S	S	S	E	S	G	27	G	34	37	38	38	36	36	32	42	29	23	16	B	Y 23	B	B
27	B	B	B	B	B	B	B	G	33	G	G	36	G	G	35	G	G	G	G	G	39	B	S	B
28	S	18	E	E	E	G	G	G	G	32	35	G	47	G	G	G	G	G	G	B	S	19	S	S
29	B	S	14	E	S	15	21	G	32	34	39	36	38	G	36	G	G	G	G	B	E	E	S	S
30	E	E	E	E	S	16	B	G	33	35	72	58	68	40	41	53	48	45	45	B	Y 30	45	S	S
MED	U 24					17			36	35	37		36					28	22	16	30	26		U 30
NO	9	12	13	14	12	13	27	30	30	30	30	30	30	30	29	30	30	30	30	17	13	11	4	5

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 78
IONOSPHERIC DATA

f min, Mc, April 1956 — 75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Lang. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	E S 15	E	E S 12	E	E	E	E S 15	E S 16	E S 16	E S 16	21	20	E S 16	E S 15	E S 17	c S 16	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 12	E S 15
02	E S 12	E	E	E	E	E	E S 15	E S 16	E S 16	E S 16	E S 17	20	19	E S 15	E S 16	E S 16	E S 16	E S 15	E S 14	E	E S 11	E S 16	E S 16	E S 16
03	E S 12	E S 15	E S 15	E S 15	E S 11	E S 14	E S 15	E S 15	E S 16	E S 16	E S 16	23	19	E S 16	18	E S 16	19	E S 16	E S 16	E	E S 15	E S 16	E S 16	E S 12
04	E S 16	E S 13	E	E S 12	E	E S 13	E S 11	E S 15	E S 16	E S 13	E S 16	23	21	20	23	E S 17	20	E S 16	E S 15	E S 15	E S 15	E S 16	E S 15	E S 15
05	E S 15	E S 13	E S 15	E S 13	E	E S 15	E S 15	E S 15	E S 16	E S 16	22	21	21	23	E S 16	E S 16	E S 16	E S 15	E S 16	E S 16	E S 15	E S 15	E S 14	E S 15
06	E S 16	E	E	E	E	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	19	19	22	17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16
07	E S 16	E S 16	E S 13	E S 12	E S 13	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	20	21	22	19	18	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16
08	E S 16	E S 13	E S 15	E S 16	E S 13	E	E S 13	E S 16	E S 16	E S 16	E S 16	20	23	24	E S 16	E S 16	E S 15	E S 19	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16
09	E S 15	E	E	E	E	E S 15	E S 16	E S 15	E S 16	E S 17	20	23	25	23	22	E S 16	E S 16	E S 17	E S 14	E S 16	E S 15	E S 16	E S 15	E S 16
10	E S 16	E S 16	E S 13	E S 11	E S 12	E S 16	E S 16	E S 16	E S 16	E S 18	E S 16	21	19	20	C	18	E S 16	E S 16	E S 17	E S 18	E S 15	E	E S 16	E S 16
11	E S 15	E S 16	E S 16	E S 11	E S 12	E S 13	E S 16	E S 16	E S 16	E S 16	E S 16	21	20	21	E S 17	18	E S 17	E S 16	E S 16	E	E S 16	E S 16	E S 15	E S 16
12	E S 15	E	E	E S 13	E S 13	E S 13	E S 16	E S 16	E S 16	19	E S 16	E S 16	17	18	E S 15	26	23	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16
13	E S 15	E S 15	E S 15	E S 12	E	E S 16	E S 16	E S 15	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 17	18	E S 16	17	E S 15	E	E S 16	E S 16	E S 15	
14	E S 16	E S 15	E S 15	E S 16	E S 12	E S 16	E S 17	E S 16	E S 16	E S 16	E S 16	E S 16	17	E S 16	17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15	E S 15
15	E S 16	C	C	E S 15	E S 13	E	E S 15	E S 15	E S 16	E S 15	E S 16	20	E S 16	E S 16	20	E S 17	E S 17	19	E S 15	E S 16	E S 15	E S 15	E S 15	E S 15
16	E S 16	E S 15	E S 15	E	E	E S 15	E S 15	E S 16	E S 16	E S 16	20	21	20	19	19	18	19	E S 16	E S 15	E S 16	E S 16	E S 15	E S 16	E S 16
17	E S 16	E S 16	E S 16	E S 16	E S 16	E S 13	E S 15	E S 16	E S 16	E S 17	19	19	22	20	19	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15	E S 16	E S 15	E S 15
18	E S 15	E S 12	E S 15	E S 13	E S 12	E S 13	E S 16	E S 16	E S 16	21	24	25	27	22	21	19	19	18	18	18	E S 16	E S 15	E S 16	E S 14
19	E S 15	E S 13	E S 13	E S 12	E S 12	E S 15	E S 16	E S 16	18	18	20	24	24	21	25	18	24	E S 16	20	E S 16	E S 15	E S 16	E S 13	E S 15
20	E S 16	E S 15	E S 13	E S 12	E S 13	E S 15	E S 16	E S 16	17	E S 16	18	24	22	23	. 22	E S 16	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16
21	E S 15	E S 14	E S 16	E S 12	E S 12	E S 14	17	18	17	21	21	21	25	22	22	25	23	18	17	14	E	E	E S 15	E S 15
22	E	E	C	E	E S 12	E S 13	E S 15	18	17	25	27	24	33	39	22	24	20	19	E S 15	E S 15	E S 14	E S 13	E S 16	E S 15
23	E S 15	E	E	E	E S 12	E S 15	E S 15	E S 17	E S 16	E S 16	19	21	24	19	22	E S 17	E S 16	E S 15	E S 15	E S 15	E S 15	E S 15	E S 16	E S 16
24	E S 15	E S 12	E	E S 11	E S 12	E S 11	18	17	E S 16	E S 17	22	22	19	E S 16	20	16	E S 16	E S 16	E S 16	E S 16	E S 16	E S 15	E S 16	E S 15
25	E S 15	E S 16	E S 16	E S 12	E S 16	E S 19	E S 16	E S 16	E S 16	17	21	19	19	15	E S 16	21	E S 16	E S 16	E S 15	E S 11	E	E S 15	E S 15	E S 15
26	19	E S 11	E S 13	E S 13	E	E S 15	18	E S 15	E S 16	E S 16	20	20	24	24	18	17	E S 16	21	E S 15	E S 12	22	E B 15	B	B
27	B	B	B	B	B	22	B	27	24	20	18	19	22	20	20	E S 17	28	E S 17	E S 16	E S 15	E S 15	19	E S 15	20
28	E S 16	E S 16	E	E	E	E	E S 15	E S 15	18	18	22	24	23	23	23	21	17	22	E S 16	20	E S 12	E	E S 16	E S 16
29	20	E S 15	E S 12	E	E S 12	E	18	18	20	18	24	24	24	23	27	H 23	20	18	18	20	E	E	E S 15	E S 16
30	E	E	E	E	E S 12	E S 11	27	18	E S 16	E S 15	19	21	20	18	21	18	E S 16	18	E S 15	23	E S 11	E	E S 16	E S 16
MED																								
NO																								

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 79
IONOSPHERIC DATA

h'F2, Km, April 1956 — 75°W Mean Time

Station Washington, D.C. Lat. 38.7°N Long. 77.1°W — Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. — Monual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	U S 300	U S 310	U S 330	330	330	290	290	290	U L 270	330	270	H 340	360	390	390	340	U L 300	L	260	240	250	270	270	260
02	260	260	270	270	270	290	280	L	300	320	280	330	370	380	380	270	350	L	290	250	240	260	250	260
03	320	330	300	250	260	250	240	240	250	L	260	280	290	290	300	270	260	250	240	230	250	260	280	300
04	290	270	290	270	250	260	250	230	240	L	L	250	310	270	L	260	250	240	240	220	230	250	250	260
05	280	270	270	260	260	250	250	250	250	260	270	U L 260	310	U L 270	290	320	290	L	260	240	240	260	F 260	F 280
06	270	270	260	250	260	260	250	240	L	U L 250	320	290	270	280	U L 300	L	L	L	250	230	260	280	290	250
07	270	270	270	260	280	310	280	250	280	L	L	L	320	300	300	L	U L 250	L	250	230	230	230	250	280
08	290	270	270	260	270	270	250	240	250	260	280	310	290	L	U L 270	U L 300	280	U A 260	240	230	U A 240	240	250	280
09	270	260	270	250	240	280	250	230	240	280	260	280	310	290	270	U L 280	260	U L 260	245	230	230	240	250	260
10	260	260	280	290	320	290	260	240	250	280	260	260	290	280	C	L	L	270	250	240	240	270	260	260
11	F 270	F 280	280	250	260	270	250	240	250	250	L	310	330	300	320	320	L	L	250	240	240	260	290	270
12	260	250	270	280	280	280	270	L	250	250	260	310	U L 310	U L 320	310	280	300	250	250	240	240	260	260	260
13	270	260	260	260	250	250	250	230	U A 250	250	L	280	290	290	320	L	U L 300	U L 270	U A 250	U A 240	U A 260	270	260	260
14	250	260	270	270	240	240	240	240	H 230	250	U A 270	H 260	U H 260	290	290	280	260	240	U A 240	240	240	250	U A 280	270
15	U A 290	C	C	250	260	220	240	U A 230	250	260	U A 310	U A 300	I A 320	330	310	340	I A 300	250	250	230	230	260	260	250
16	280	310	300	300	I A 280	260	250	250	250	270	280	280	L	H 280	281	L	L	L	250	230	260	250	300	280
17	240	290	310	300	290	270	250	250	250	H 250	L	290	290	L	L	300	L	L	250	240	240	240	260	260
18	300	330	330	330	340	280	280	280	420	490	470	480	460	430	430	430	370	350	260	270	270	280	300	290
19	320	320	320	320	290	F 290	270	U L 280	U L 350	U L 450	460	430	440	390	400	U L 390	370	U L 320	280	250	240	260	290	320
20	320	U S 290	290	290	290	290	260	250	U L 290	U L 260	340	H 280	H 330	370	370	360	360	L	270	250	230	250	270	290
21	310	300	320	310	320	320	L	340	400	710	510	610	540	610	610	540	470	360	260	240	260	280	270	470
22	U A 500	F 400	C	410	450	360	G	G	F 600	560	G	760	G	620	500	430	360	320	290	270	270	280	280	280
23	U S 290	280	330	340	360	260	L	380	450	440	450	420	430	450	460	390	U L 380	U L 350	L	270	250	270	270	280
24	300	290	280	260	250	250	260	270	260	300	290	340	320	I A 320	320	320	300	260	250	250	250	250	U A 280	280
25	270	280	280	260	270	260	250	250	300	280	280	L	330	330	L	300	U L 300	L	270	250	240	245	260	280
26	300	310	300	300	290	240	250	L	350	340	390	380	350	380	360	350	360	360	300	320	E B 400	B	B	B
27	B	B	B	B	B	E B 500	B	G	G	G	G	G	G	G	G	530	470	480	350	300	U F 360	B	B	360
28	F 320	360	F 310	290	310	330	G	L	430	530	510	520	520	620	500	530	440	350	320	330	280	F 400	400	370
29	360	410	I B 420	420	390	380	L	560	310	340	320	380	380	H 360	360	360	340	290	270	240	250	270	280	U S 340
30	F 330	F 320	F 350	F 310	F 330	280	280	H 410	500	450	380	310	320	325	310	340	299	L	250	240	240	270	290	290
MED	290	280	290	280	280	270	250	250	270	280	310	310	320	330	320	340	300	270	250	240	240	260	270	280
NO	29	28	27	29	29	29	26	26	29	27	25	28	29	28	26	25	25	19	29	30	29	28	28	29

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 80

IONOSPHERIC DATA

h'Fl, Km, April 1956 — 75°W Mean Time

Station Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01								260	240	210	230	215	220	205	210	215	230	235	255					
02								245	235	220	220	220	200	215	225	235	230	250	260					
03									215	220	220	215	215	215	220	225	230	235						
04									230	215	210	215	215	220	220	230	230							
05								240	225	210	200	215	200	210	210	230	225	230						
06									240	210	205	220	230	210	215	215	230	240						
07							270	240	225	210	205	220	210	220	215	225	235	235						
08									230	220	210	210	205	210	220	230	225							
09									220	210	200	220	215	215	220	220	230	245						
10								230	210	215	200	200	220	225	220	215	230	220						
11								235	210	210	205	210	220	205	230	230	240	240						
12							250	240	220	215	205	220	210	215	215	230	235	230						
13										220	240	230	215	210	225	225	250	240						
14									225	205	200	200	225	205	210	210	220							
15										250	A	A	A	230	250	A	A	240						
16									230	220	220	200	210	200	215	215	230	240						
17								225	220	215	210	210	220	220	235	220	220	240						
18								240	230	215	H 205	H 210	H 215	230	215	225	230	245						
19								235	220	210	205	200	215	220	230	220	235	245	250					
20								245	220	205	190	190	205	215	220	220	230	240	255					
21							260	240	225	215	210	205	205	240	245	250	260	260	250					
22							300	270	260	235	215	200	205	230	230	240	240	250	270					
23							280	240	205	210	205	200	210	230	220	210	230	235	260					
24							235	235	235	210	200	230	200	A	H 200	220	210	240						
25								230	210	205	200	190	190	200	220	220	215	240	250					
26								250	225	205	200	200	220	230	220	220	230	250	260					
27								270	235	205	180	210	235	235	235	215	270	250	270					
28							280	240	220	205	200	190	180	200	200	210	235	250	260					
29							265	260	245	215	215	215	215	210	235	220	215	230	245					
30								235	230	210	240	235	230	215	220	240	245	240	245					
MED							270	240	225	210	205	210	215	215	220	220	230	240	255					
NO							8	21	28	30	29	29	29	29	30	29	29	27	13					

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 81

IONOSPHERIC DATA

h'E, Km, April 1956 — 75°W Mean Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							119	109	H 109	105	H 109	H 105	101	H 101	101	H 101	109	109	125					
02								H 109	H 105	101	105	H 101	101	101	101	101	109	113	H 119					
03							A	A	U A 105	103	101	109	101	101	101	105	109	109	127					
04							115	109	109	105	H 101	101	U A 101	U A 101	101	105	109	109	119					
05								115	105	U A 101	109	101	101	103	101	101	101	103	119					
06								111	103	H 101	H 101	103	H 101	101	101	101	101	105	120					
07							121	115	105	101	101	101	101	H 101	H 101	101	101	109	121					
08							115	109	U A 105	103	101	H 101	107	101	H 101	H 101	105	111	116					
09							H 135	107	107	103	103	H 107	H 105	105	105	I A 105	H 105	H 109	111					
10							A	H 105	105	101	101	101	101	101	I C 103	105	105	I A 112	H 119					
11							S	109	105	101	103	103	U A 101	U A 101	101	101	109	109	119					
12							129	109	I A 107	105	101	H 99	99	H 101	101	E B 111	E B 107	H 109	119					
13							A	105	A	A	H 101	101	101	101	99	101	H 103	113	119					
14							E S 141	H 107	105	H 99	H 99	H 99	99	H 99	H 99	H 99	101	109	H 117					
15							E S 121	H 111	H 103	103	105	105	103	101	101	103	109	115	119					
16								H 101	101	101	101	101	H 101	H 101	101	101	105	H 109	115					
17							119	105	103	101	H 101	101	H 101	101	101	101	101	H 111	111					
18							119	109	107	H 105	H 105	107	103	105	101	105	H 101	111						
19							E S 121	121	111	H 109	H 109	105	105	103	105	107	E B 117	109	E B 125					
20							E A 127	H 109	E A 125	H 99	H 101	H 109	101	103	101	101	105	109	120					
21							121	115	105	105	103	101	103	101	109	109	111	111	115					
22							119	111	H 103	109	109	109	U B 115	I B 111	107	111	109	111	111	120				
23							111	H 109	109	101	101	103	103	101	101	101	101	109	119					
24							U B 129	109	103	101	105	105	101	101	105	101	105	111	121					
25								101	105	101	101	101	101	101	H 101	101	105	111	H 115					
26							125	111	105	103	105	101	103	101	105	A	A	A						
27									E B 115	103	101	101	105	101	101	103	119	115	120	S				
28						121	109	109	109	103	103	107	109	109	105	109	109	121	121					
29							U B 129	109	109	105	105	107	109	105	111	105	E B 109	U B 115	119					
30							B	113	105	101	101	105	105	105	105	H 101	105	109	109					
MED								119	109	105	103	101	102	101	101	101	101	105	109	119				
NO						1	15	28	27	29	30	30	30	30	30	28	26	29	27	1				

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 82

IONOSPHERIC DATA

(M3000) F2, April 1956 — 75°W Meon Time

Station: Washington, D.C. Lat. 38.7°N Long. 77.1°W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Manual ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01	270	250	240	250	250	270	300	300	305	295	280	280	270	270	270	280	285	285	295	290	285	275	270	290
02	F 290	F 290	F 280	F 280	F 280	F 280	290	290	300	295	290	290	270	250	260	260	265	265	280	290	265	280	265	270
03	260	240	250	270	270	290	290	310	315	295	290	290	290	290	290	290	300	310	310	300	U S 290	280	270	260
04	265	270	260	270	290	275	320	330	320	305	290	290	295	295	280	290	290	300	300	300	290	290	275	280
05	280	285	275	290	270	290	305	320	330	315	310	290	295	290	290	280	300	290	290	300	280	F 290	F 285	U F 280
06	U F 280	U F 270	U F 270	F 280	F 280	285	310	340	310	305	295	290	280	295	250	290	290	290	305	290	290	260	265	U S 300
07	270	275	280	280	250	260	295	300	320	310	300	290	290	300	290	295	300	305	300	310	310	290	280	270
08	275	280	285	285	285	290	305	310	310	310	310	290	295	285	290	285	290	295	300	310	300	290	285	275
09	270	275	270	280	300	280	310	320	315	305	300	300	290	290	285	285	285	290	290	305	300	290	F 305	U F 300
10	F 290	F 290	F 280	260	255	270	305	310	310	305	300	290	285	280	C	280	280	290	290	290	280	280	U F 285	F 285
11	F 270	F 265	F 270	F 270	U F 270	U F 275	F 310	315	320	300	290	290	280	280	265	270	275	280	290	290	280	270	270	270
12	280	270	270	260	270	275	305	305	305	305	290	285	280	270	280	280	280	280	U S 285	285	290	275	275	280
13	U S 280	280	270	270	265	290	315	U S 320	U S 300	295	290	290	285	280	280	275	280	285	290	U S 290	280	280	285	285
14	285	280	270	270	280	280	F 315	U S 310	F 300	290	U H 295	H 290	H 280	280	275	280	280	275	280	290	280	280	U F 280	U F 275
15	280	C	C	275	275	280	315	290	310	290	290	280	285	275	270	270	270	270	290	285	275	265	280	280
16	265	250	250	255	260	275	305	320	310	280	285	280	270	H 265	270	275	265	270	280	285	255	275	255	265
17	260	230	250	255	255	270	290	300	295	290	290	280	270	270	280	270	280	280	285	290	290	275	270	270
18	250	250	U F 250	F 260	F 255	280	310	300	265	U S 250	255	250	250	260	265	260	260	270	U C 280	U C 275	U C 265	U C 265	U C 260	U C 270
19	U C 265	U C 250	U C 255	U C 270	U C 270	280	300	290	285	260	260	265	260	270	270	U C 275	275	290	295	300	U S 275	260	260	F 250
20	F 250	F 260	F 270	F 270	F 270	F 280	310	305	305	290	290	275	270	270	270	270	265	270	280	285	265	270	270	250
21	250	250	245	250	250	260	290	285	270	210	250	230	240	220	215	220	220	250	260	270	260	250	U F 275	210
22	230	U F 250	C	F 240	F 220	270	G	G	235	240	G	210	G	220	240	260	275	280	F 280	275	270	270	U S 265	F
23	U F 280	U F 310	F 280	F 270	F 260	F 340	280	275	260	260	265	270	265	260	260	270	270	270	275	290	270	265	270	275
24	265	265	275	290	290	300	310	330	310	300	290	280	280	280	280	270	280	280	290	280	290	U S 290	U S 280	270
25	270	270	270	280	280	290	310	310	310	300	290	275	275	275	275	280	280	280	285	290	285	280	280	270
26	260	250	250	260	270	300	310	300	290	290	275	275	290	270	270	270	275	270	275	270	U F 265	B	B	B
27	B	B	B	B	B	U B 230	B	G	G	G	G	G	G	G	G	235	240	260	280	290	U F 280	U B 275	F	F 260
28	U F 290	U F 265	F 280	F 290	F 280	F 280	G	275	275	250	250	255	255	230	255	240	260	280	270	260	255	250	U F 250	240
29	260	250	260	F 250	270	F 270	315	U S 270	310	315	300	280	280	H 280	285	275	280	290	300	290	U S 280	U S 290	U S 275	240
30	F 255	U F 270	U F 260	U F 280	U F 260	F 280	285	F 280	240	260	270	300	295	290	290	280	300	295	290	300	295	280	270	270
MED	270	270	270	270	270	280	305	300	305	295	290	280	280	275	270	275	280	280	290	290	280	275	270	270
NO	29	28	27	29	29	30	29	30	30	30	30	30	30	30	29	30	30	30	30	30	30	29	28	28

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

TABLE 83
IONOSPHERIC DATA

(M3000) F1, April 1956 — 75°W Mean Time

Station Washington, D.C. Lat. 38.7°N Long. 77.1° W Sweep 1.0 Mc to 25.0 Mc in 13.5 sec. Monuol ☐ Automatic ☒

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
01							Q	L	L	340	350	H 360	H 345	H 340	H 330	350	350	L	L					
02								L	L	L 380		360	355	340	H 335	340	H 335	L	L					
03							Q	Q	L	L	L	L	L	L	L	L	L	L	Q					
04							Q	Q	L	L	L	L	L	L	L	L	L	Q	Q					
05								L	L	L	L	L	L	L	L	L	L	L	Q					
06								Q	L	L	L	L	L	L	L	L	L	L	Q					
07							L	L	L	L	L	L	L	L	L	L	L	L	Q					
08							Q	Q	L	L	U L 360	L	L	L	L	L	L	A	Q					
09							Q	Q	L	L	L	H 370	H	L	L	L	L	L	Q					
10							Q	L	L	H	H	H	H 370	L	I C	L	L	L	Q					
11							Q	L	L	L	L	H 365	360	H	350	L	L	L	Q					
12							L	L	L	L	L	U L 365	U L 365	U L 380	H	L	L	U A	Q					
13							A	A	A	L	L	L	L	L	H	L	U A	U A	Q					
14							Q	Q	L	L	I A	395	H	H 380	H	H	L	Q	Q					
15							Q	A	A	L	A	A	A	L	U A	A	A	L	Q					
16								Q	L	L	L	L	L	H 390	H	L	L	L	Q					
17							Q	L	L	H	H	360	380	L	L	H	L	L	Q					
18							Q	L	H 335	H 335	H 345	H 360	H 360	350	330	340	330	350						
19							Q	L	H 350	H 335	H 325	H 330	U B 330	330	340	L	U L 330	L	L					
20							Q	L	L	H	H 350	H 365	H 350	330	340	335	L	L	L					
21							L	340	340	H 370	360	360	370	360	350	340	300	310	L					
22							300	310	340	370	390	400	380	350	H 350	340	320	L	L	Q				
23							L	325	340	360	380	360	350	340	350	350	L	L	L					
24							L	L	L	L	390	L	L	A	H 370	L	L	L						
25								L	L	H	L	H	H	335	H	L	L	L	L					
26							Q	L	340	360	340	330	340	U L 310	350	330	330	320	L					
27								330	H 350	H 390	H 390	H 370	H 370	370	370	370	330	320	L					
28						Q	290	H 310	340	365	380	H 380	H 390	H 360	H 380	H 360	H 330	320	L					
29							315	340	340	350	360	360	360	370	350	H 350	360	L	L					
30							B	340	330	350	U A 340	U A 350	360	H 350	345	U A	U A	L	L					
MED								330	340	360	360	360	360	350	350	340	330	320						
NO							3	7	10	11	15	18	17	17	15	11	10	5						

CENTRAL RADIO PROPAGATION LABORATORY, NATIONAL BUREAU OF STANDARDS, BOULDER, COLO.

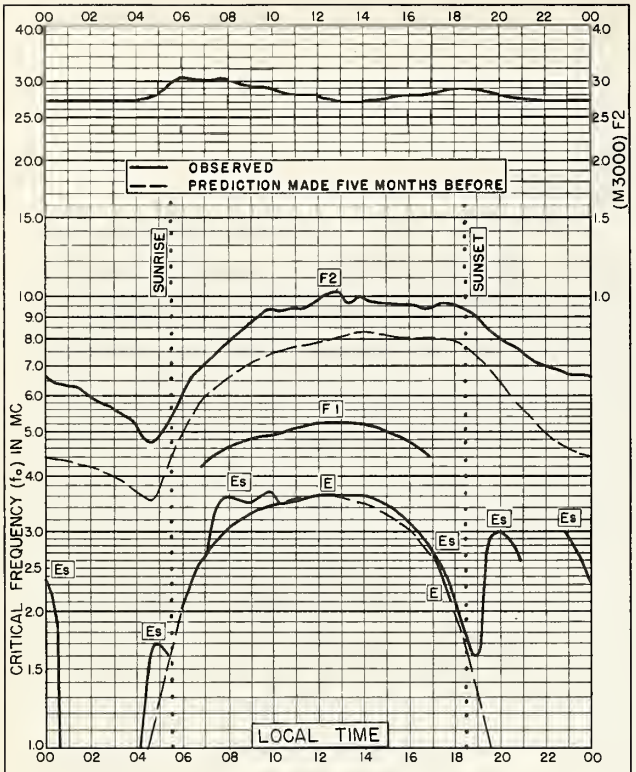


Fig. 1. WASHINGTON, D. C.
38.7°N, 77.1°W APRIL 1956

NBS 505

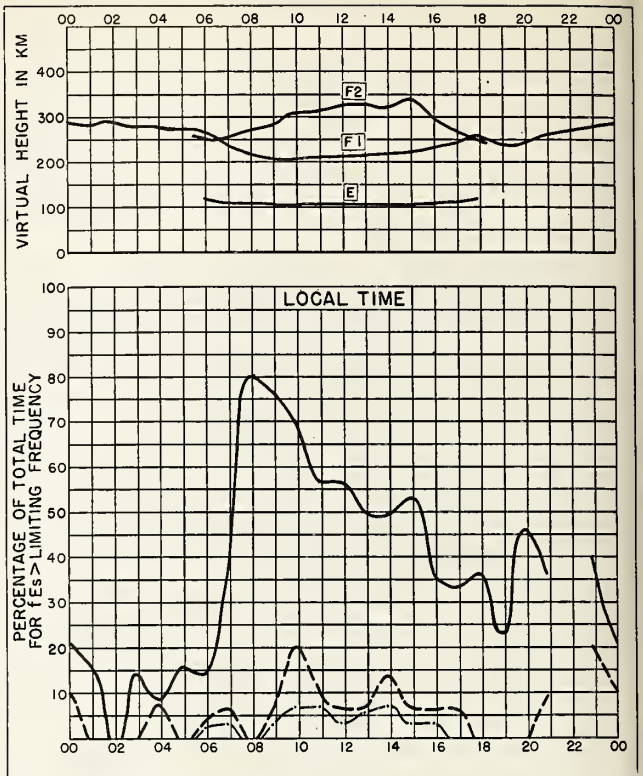


Fig. 2. WASHINGTON, D. C. APRIL 1956

NBS 490

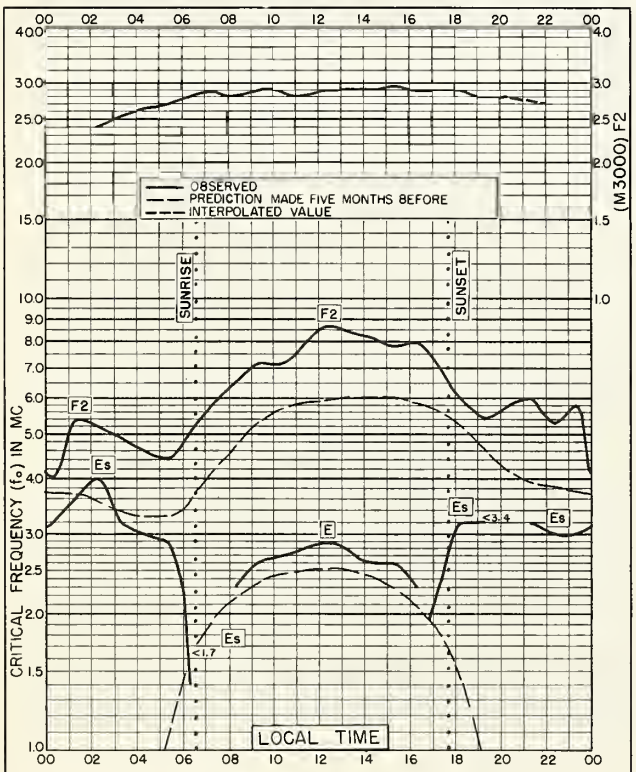


Fig. 3. TROMSO, NORWAY
69.7°N, 19.0°E MARCH 1956

NBS 503

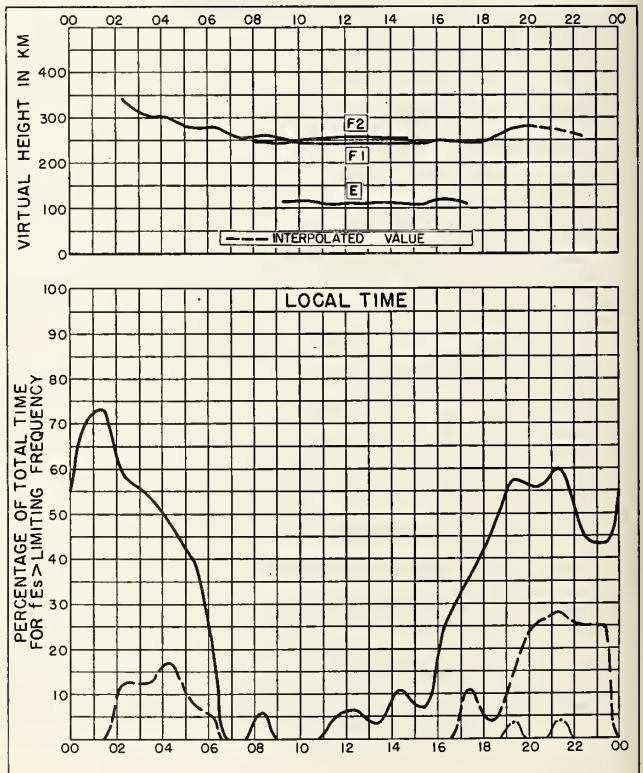


Fig. 4. TROMSO, NORWAY MARCH 1956

NBS 490

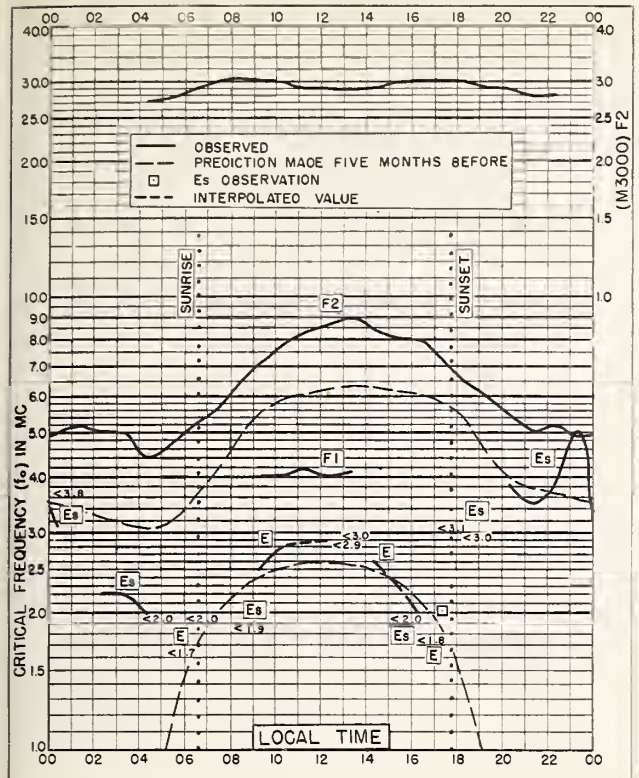


Fig. 5. KIRUNA, SWEDEN
67.8°N, 20.3°E MARCH 1956

NBS 503

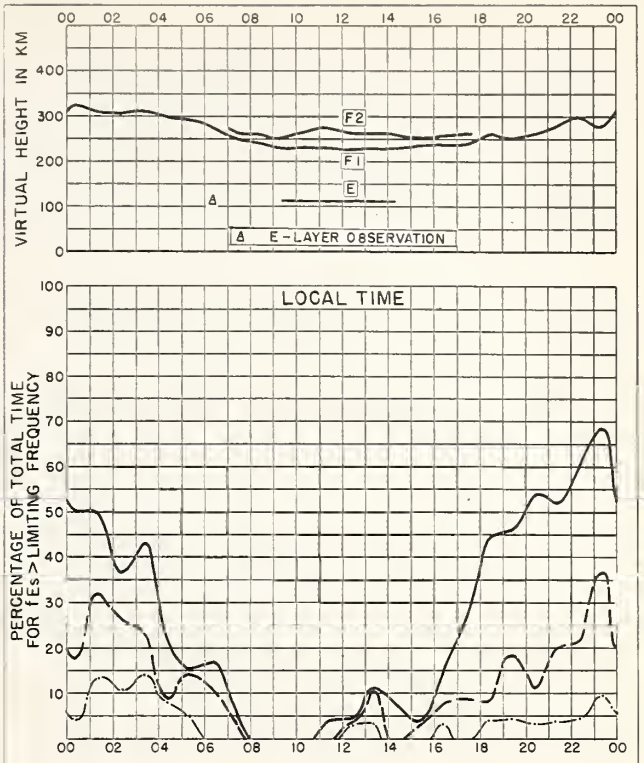


Fig. 6. KIRUNA, SWEDEN MARCH 1956

NBS 490

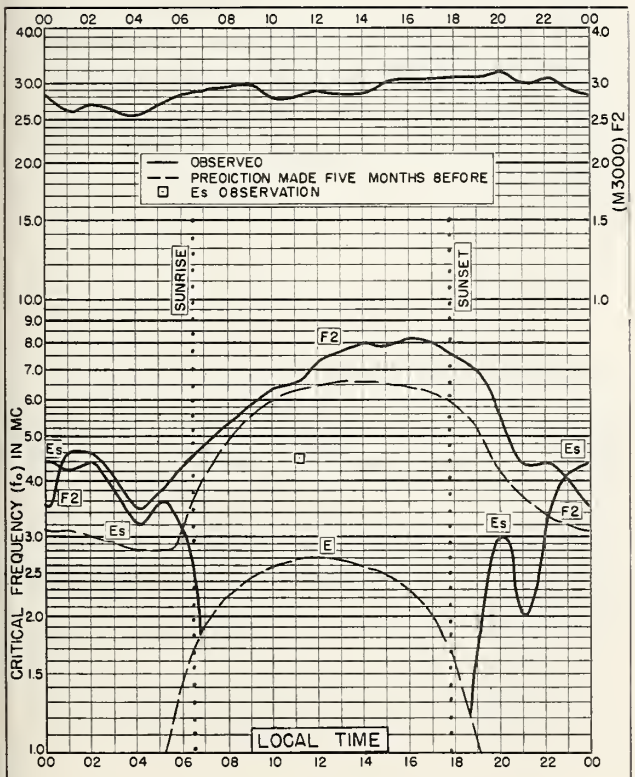


Fig. 7. FAIRBANKS, ALASKA
64.9°N, 147.8°W MARCH 1956

NBS 503

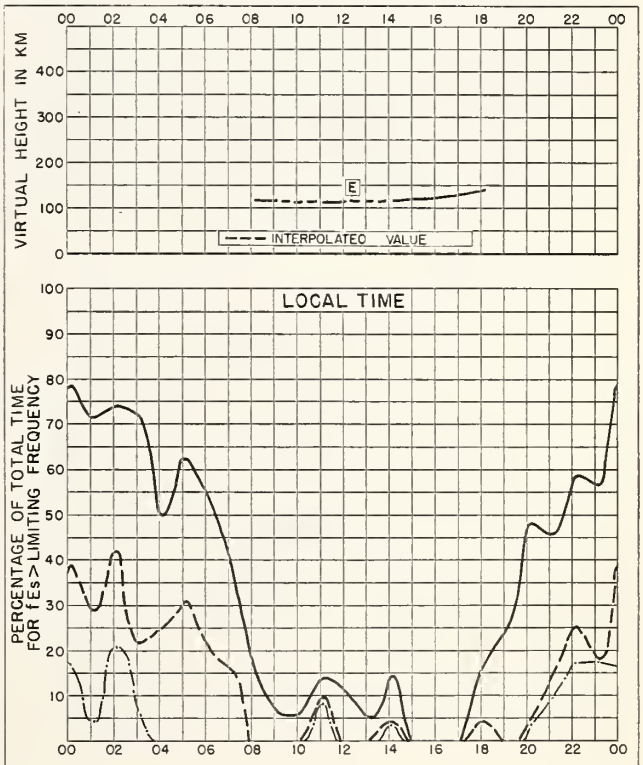


Fig. 8. FAIRBANKS, ALASKA MARCH 1956

NBS 490

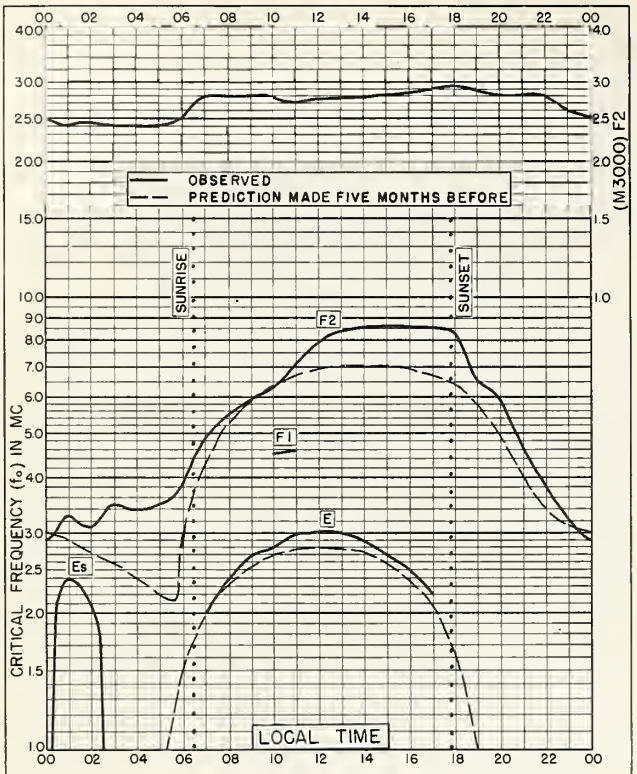


Fig. 9. ANCHORAGE, ALASKA
61.2°N, 149.9°W MARCH 1956

NBS 503

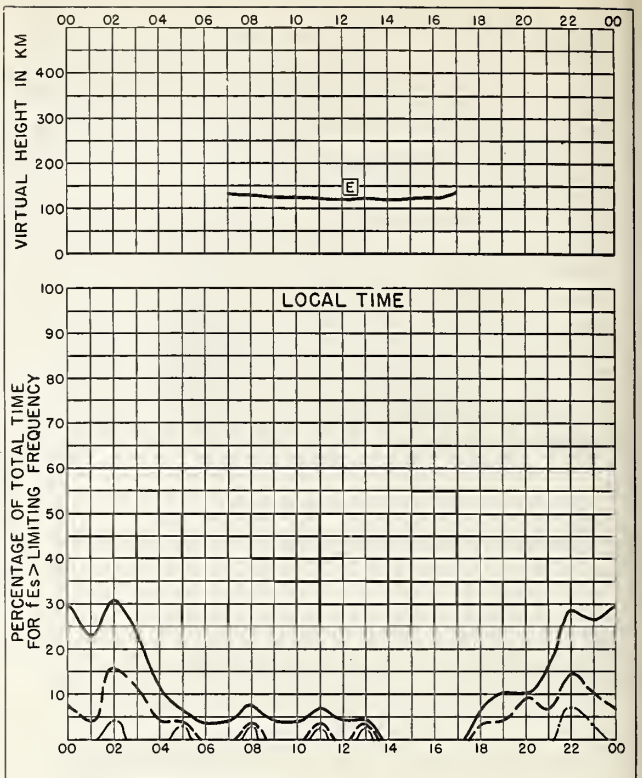


Fig. 10. ANCHORAGE, ALASKA MARCH 1956

NBS 490

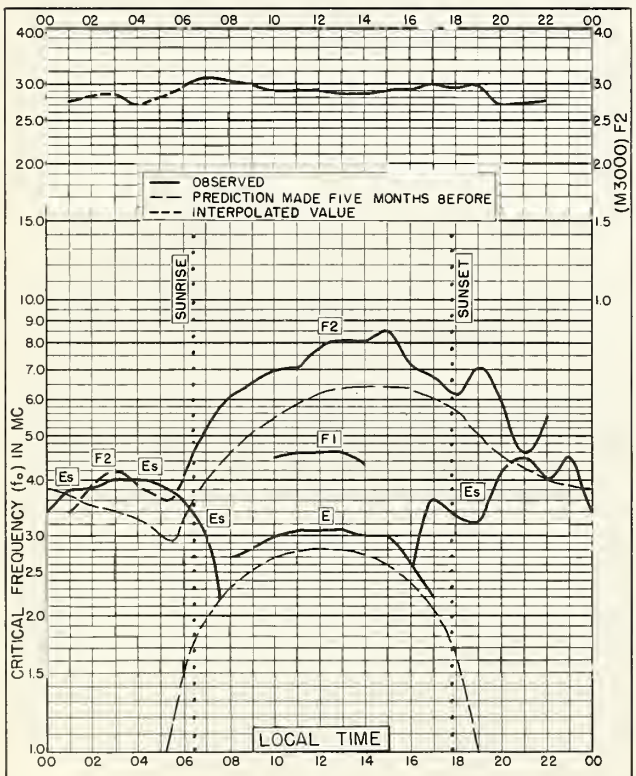


Fig. 11. NARSARSSUAK, GREENLAND
61.2°N, 45.4°W MARCH 1956

NBS 503

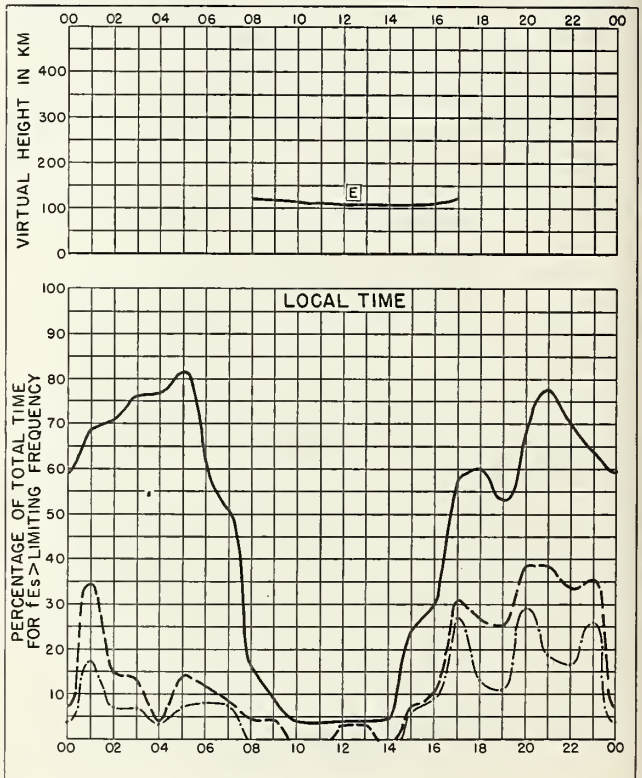


Fig. 12. NARSARSSUAK, GREENLAND MARCH 1956

NBS 490

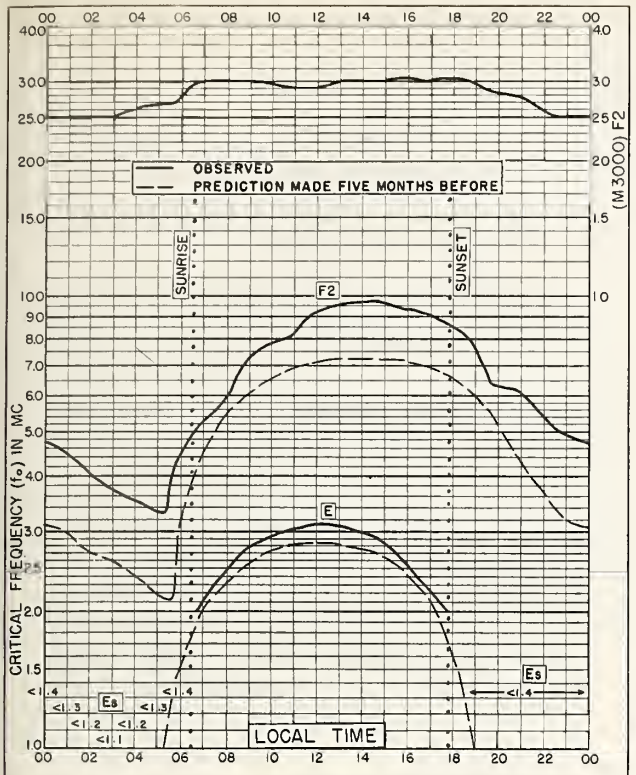


Fig. 13. OSLO, NORWAY
60.0°N, 11.1°E MARCH 1956

NBS 503

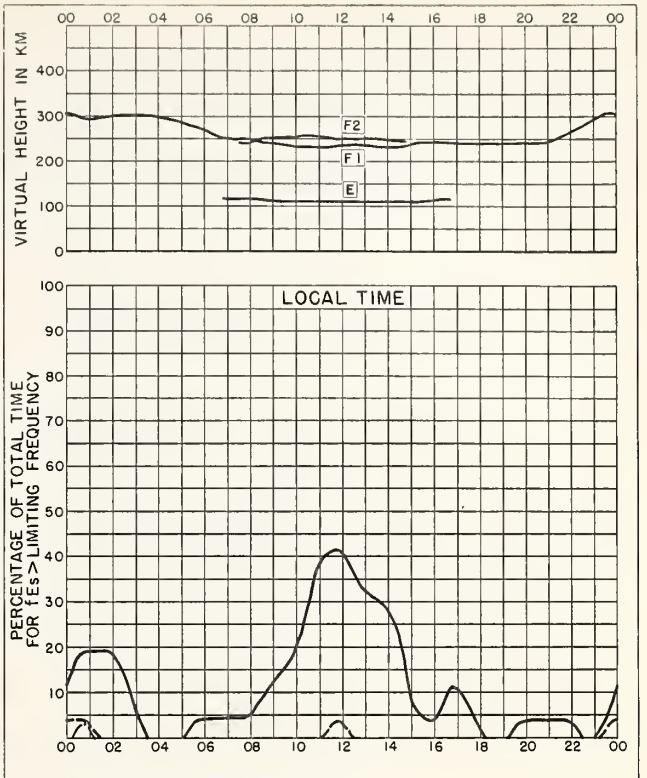


Fig. 14. OSLO, NORWAY MARCH 1956

NBS 490

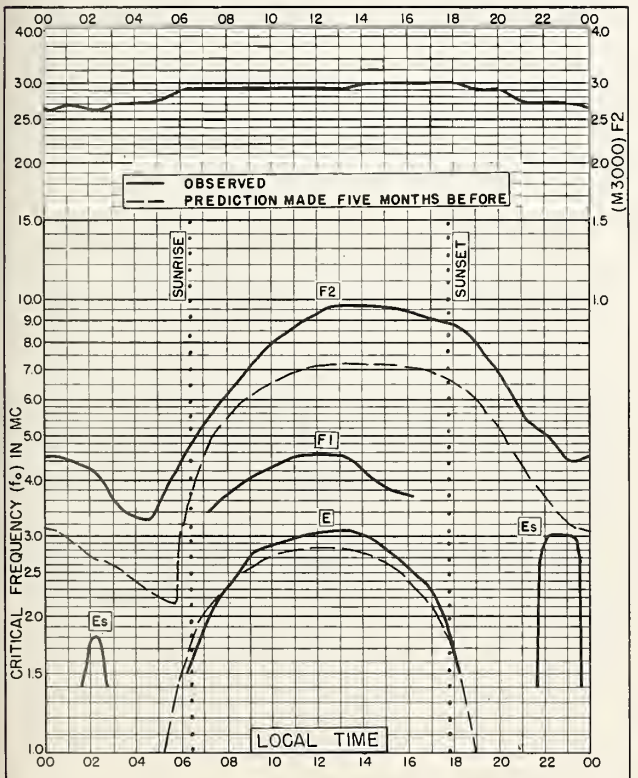


Fig. 15. UPSALA, SWEDEN
59.8°N, 17.6°E MARCH 1956

NBS 503

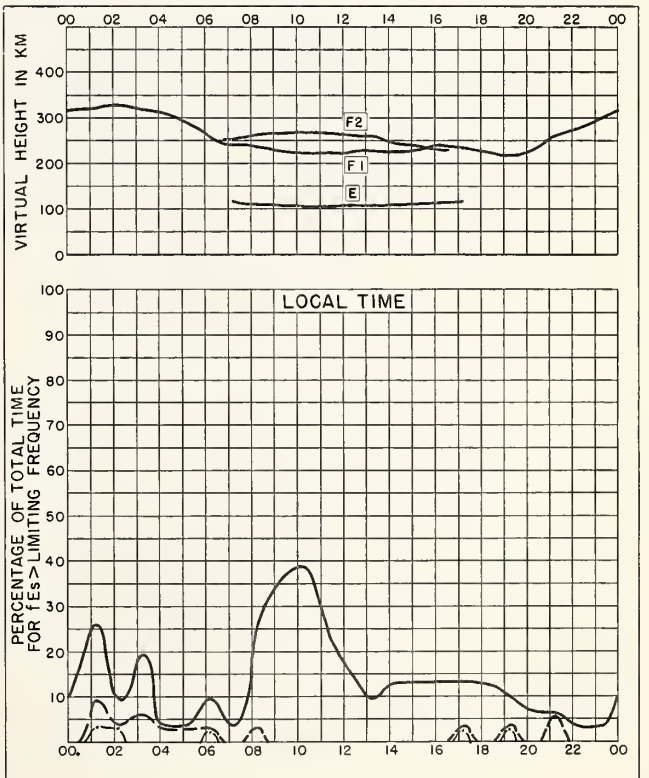


Fig. 16. UPSALA, SWEDEN MARCH 1956

NBS 490

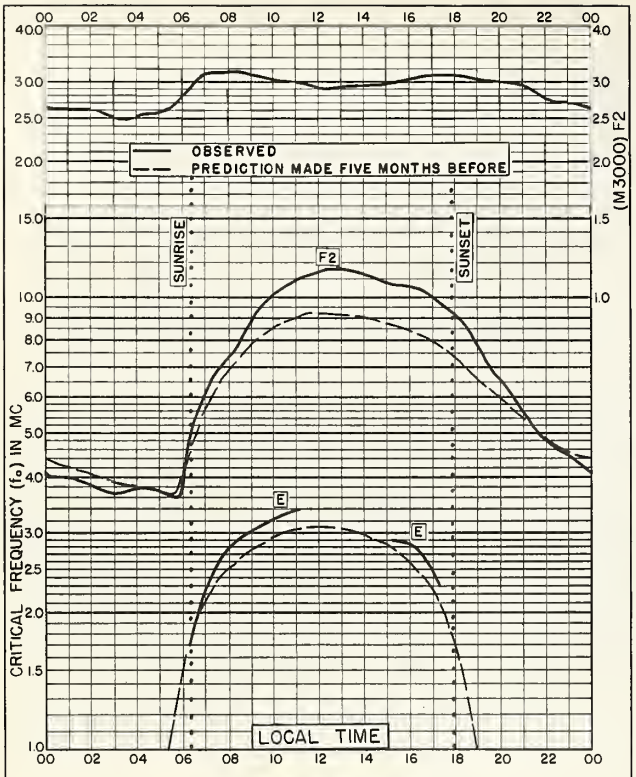


Fig. 17. ADAK, ALASKA
51.9°N, 176.6°W MARCH 1956

NBS 503

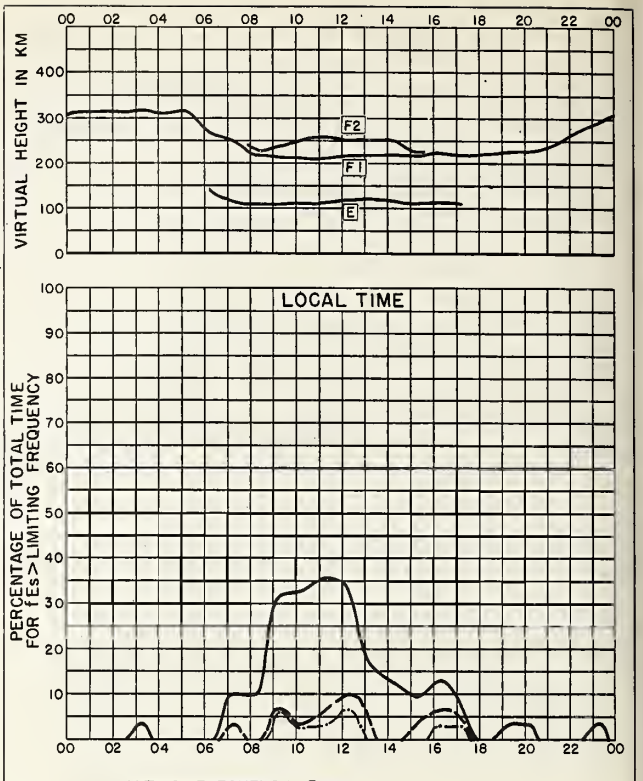


Fig. 18. ADAK, ALASKA MARCH 1956

NBS 490

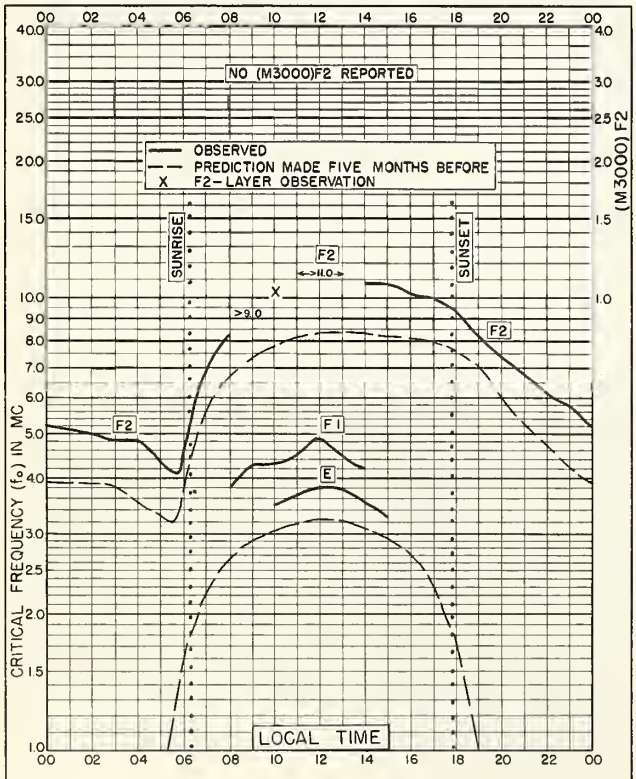


Fig. 19. GRAZ, AUSTRIA
47.1°N, 15.5°E MARCH 1956

NBS 503

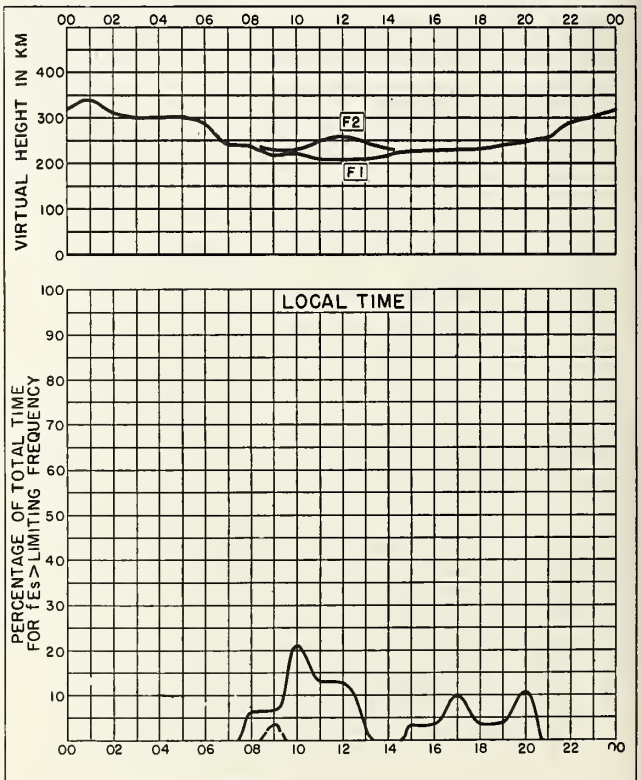


Fig. 20. GRAZ, AUSTRIA MARCH 1956

NBS 490

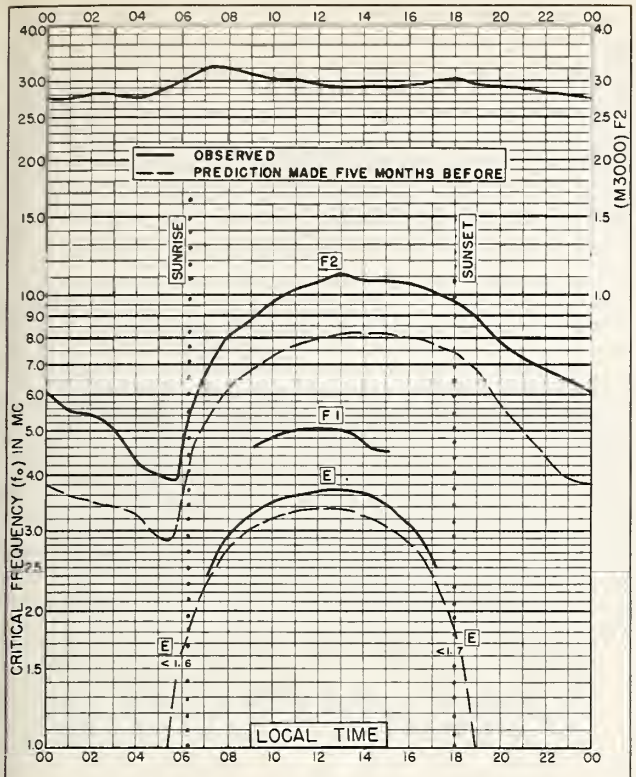
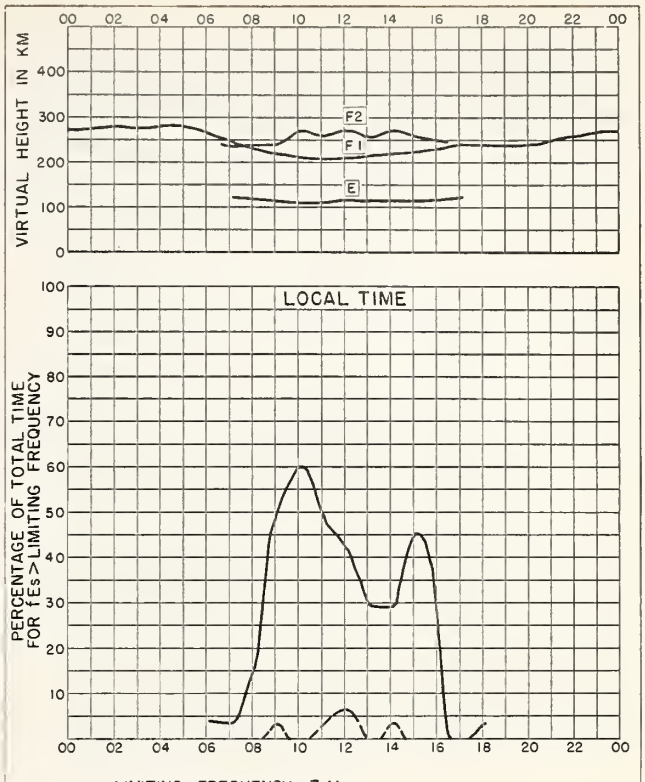


Fig. 21. FT. MONMOUTH, NEW JERSEY
40.3°N, 74.1° W MARCH 1956

NBS 503



MARCH 1956

Fig. 22. FT. MONMOUTH, NEW JERSEY

NBS 490

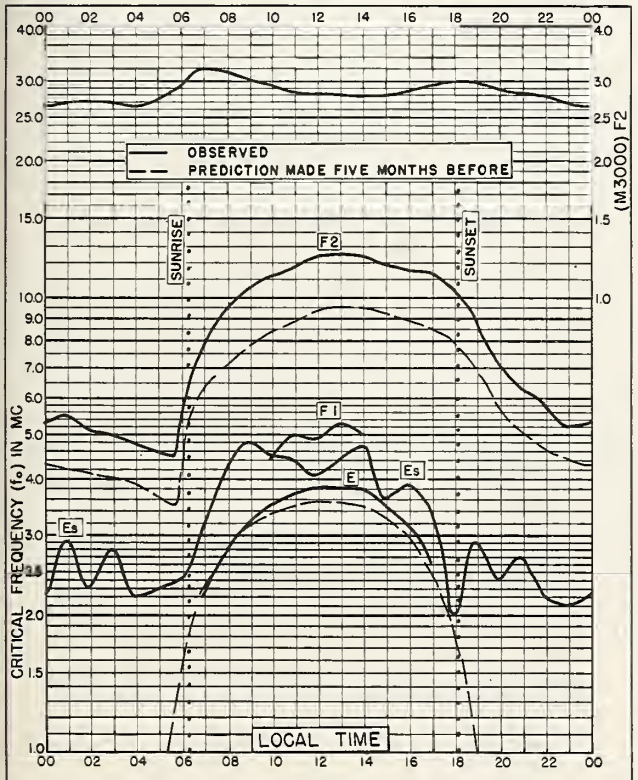
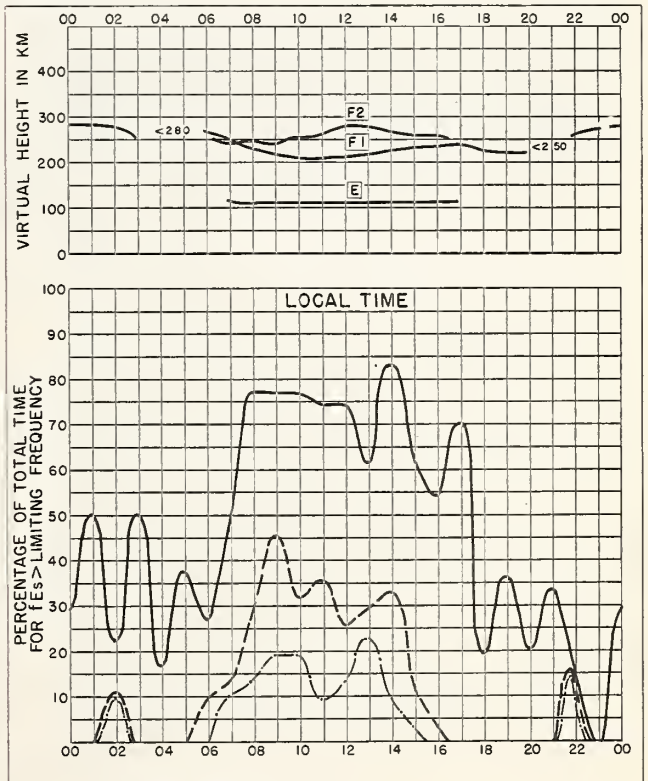


Fig. 23. WHITE SANDS, NEW MEXICO
32.3°N, 106.5° W MARCH 1956

NBS 503



MARCH 1956

Fig. 24. WHITE SANDS, NEW MEXICO

NBS 490

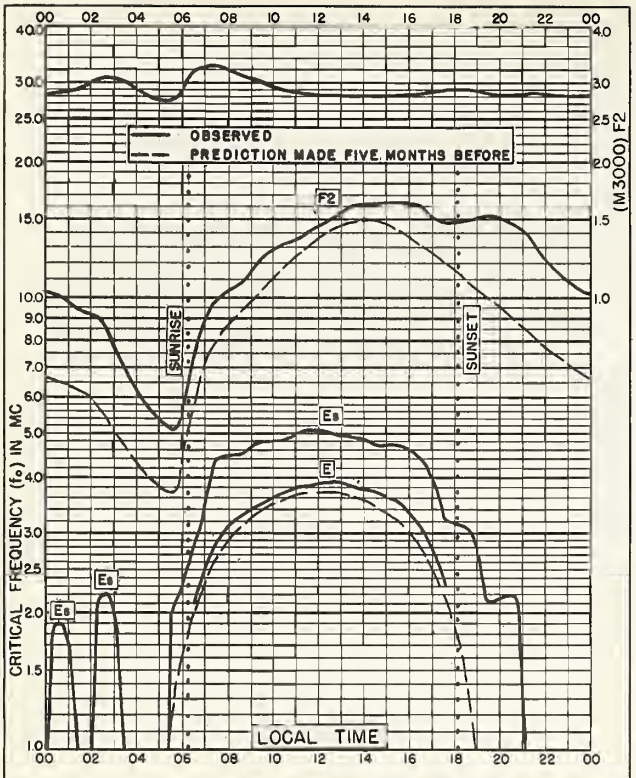


Fig. 25. OKINAWA I.
26.3°N, 127.8°E MARCH 1956

NBS 503

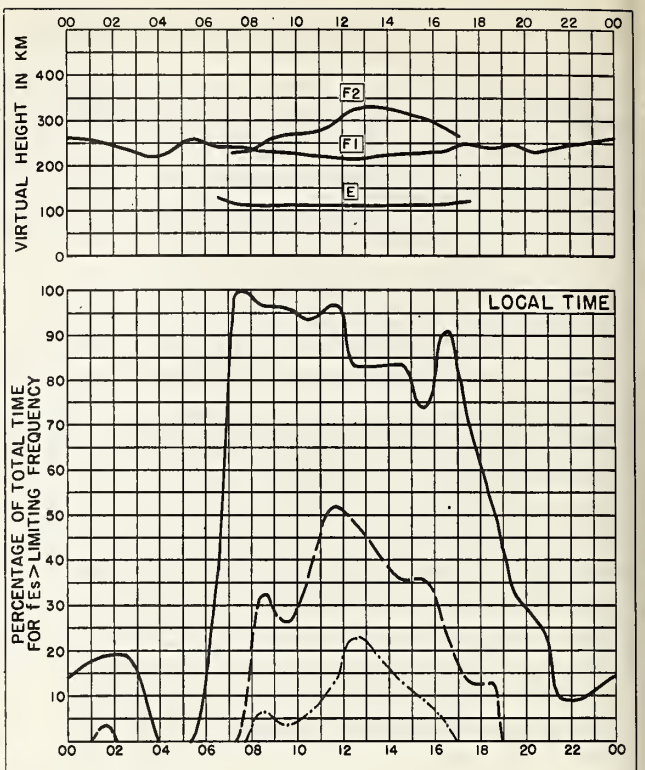


Fig. 26. OKINAWA I. MARCH 1956

NBS 490

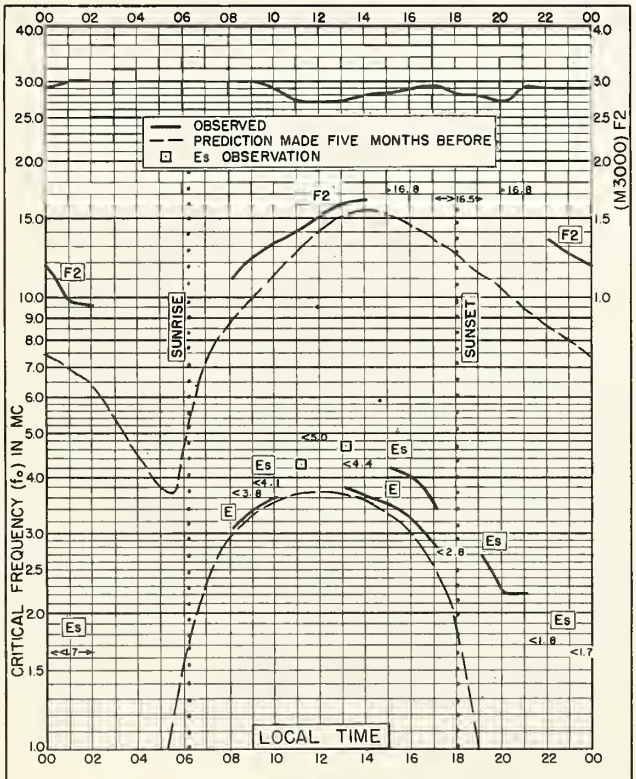


Fig. 27. FORMOSA, CHINA
25.0°N, 121.5°E MARCH 1956

NBS 503

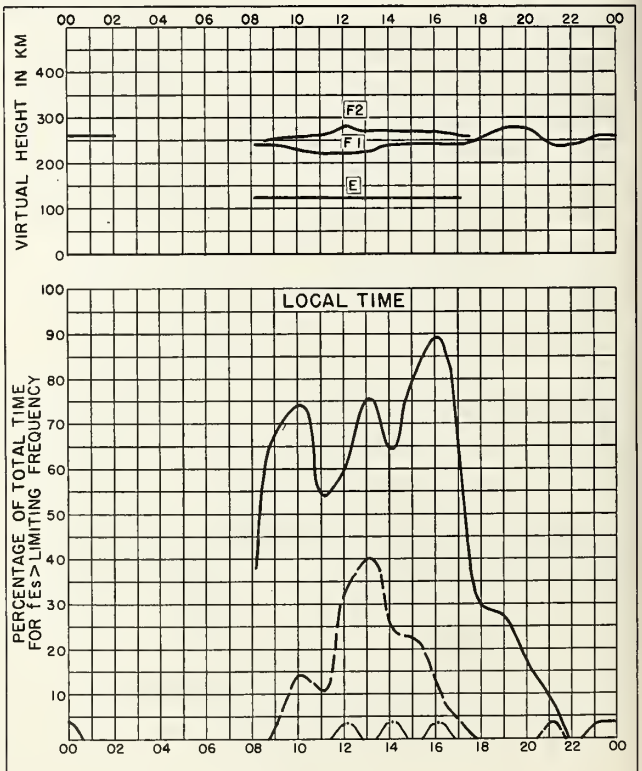


Fig. 28. FORMOSA, CHINA MARCH 1956

NBS 490

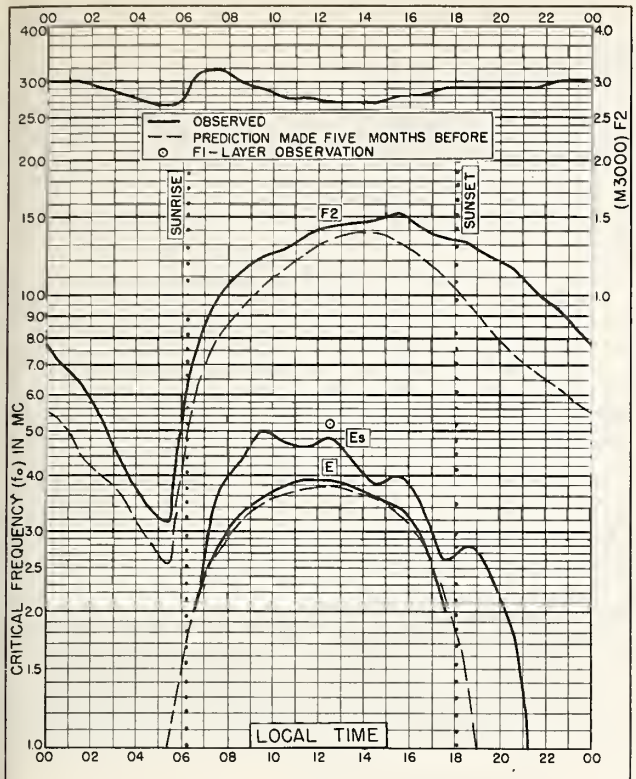


Fig. 29. MAUI, HAWAII
20.8°N, 156.5°W MARCH 1956

NBS 503

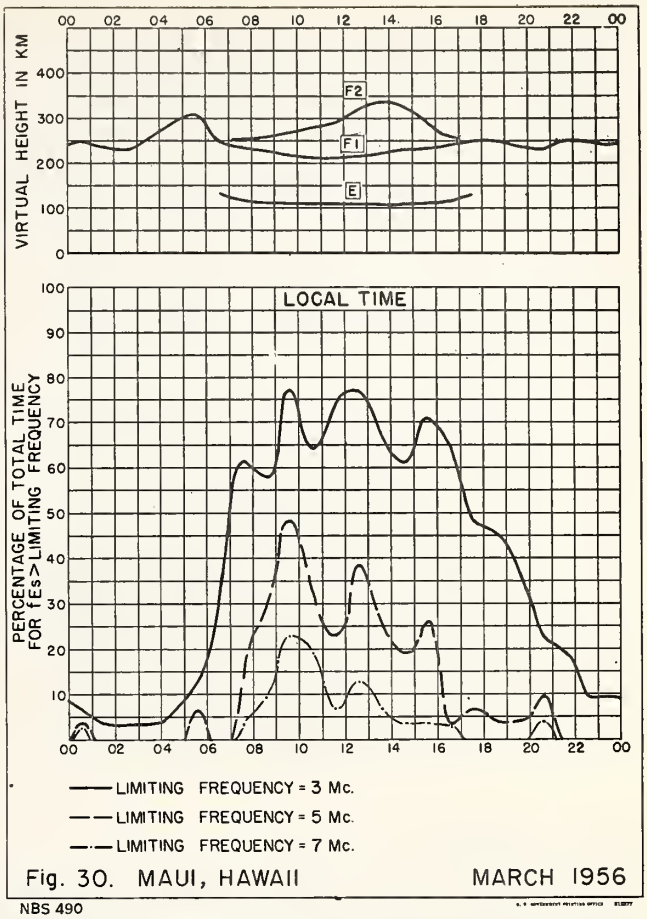


Fig. 30. MAUI, HAWAII MARCH 1956

NBS 490

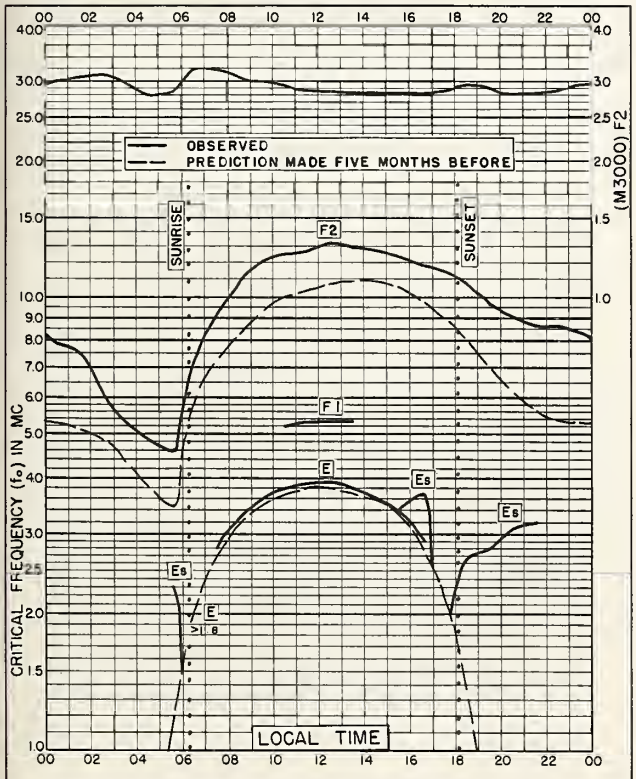


Fig. 31. PUERTO RICO, W. I.
18.5°N, 67.2° W MARCH 1956

NBS 503

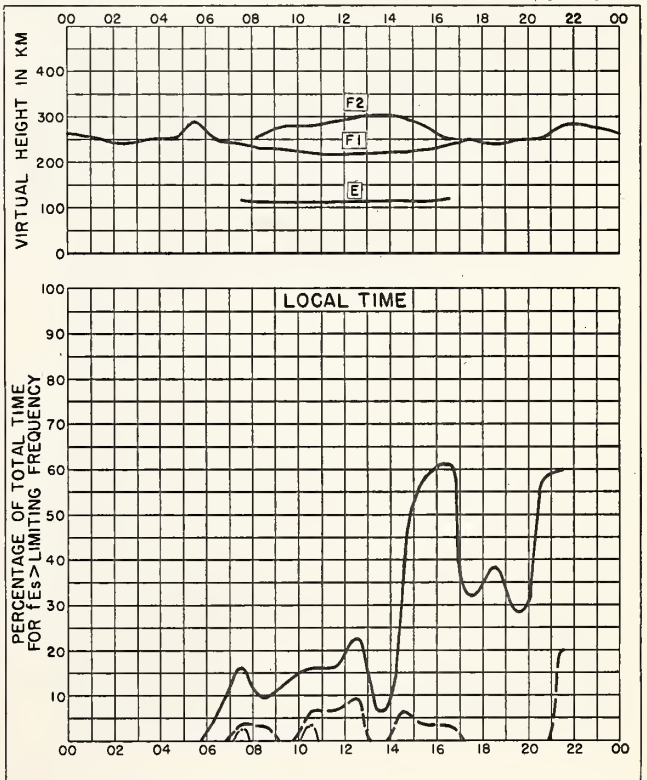


Fig. 32. PUERTO RICO, W. I. MARCH 1956

NBS 490

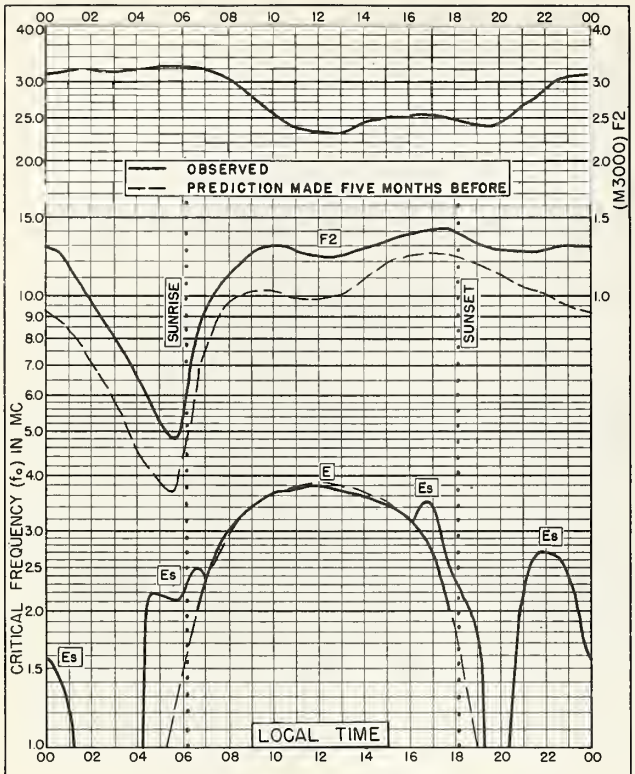


Fig. 33. GUAM I.
13.6°N, 144.9°E MARCH 1956

NBS 503

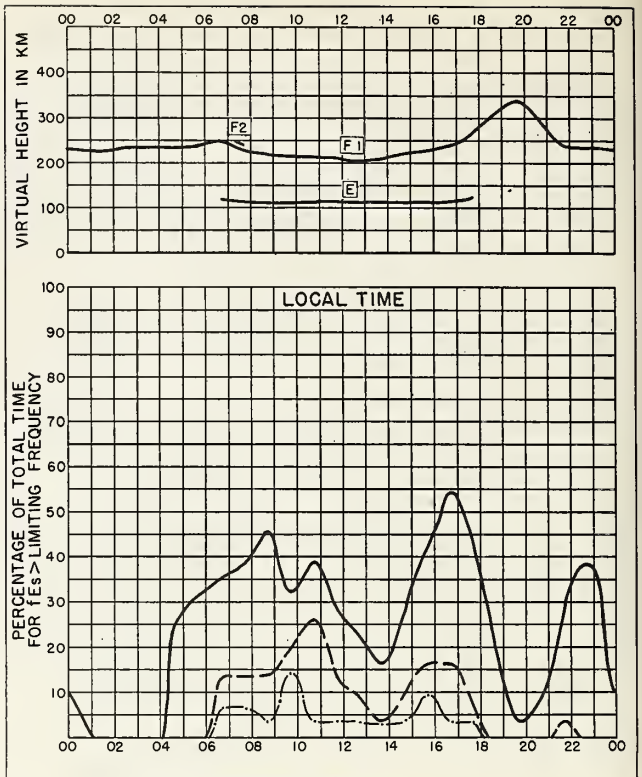


Fig. 34. GUAM I. MARCH 1956

NBS 490

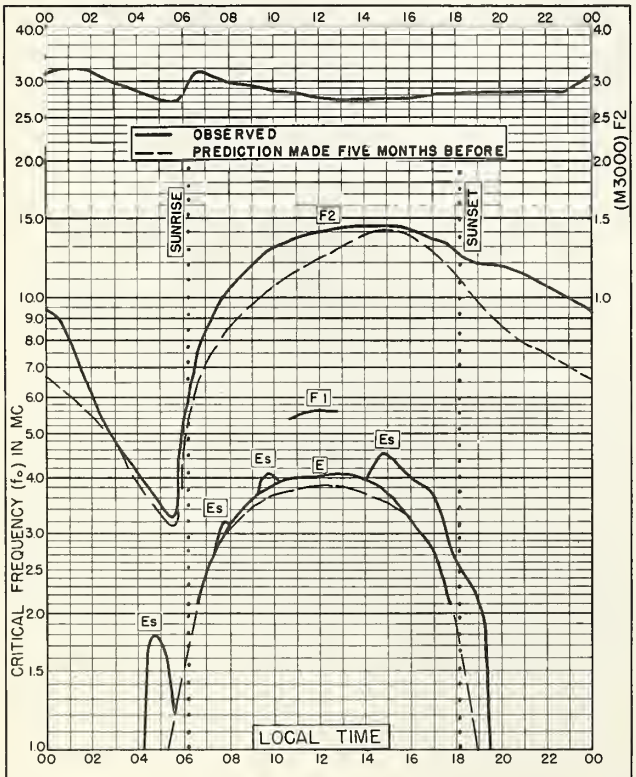


Fig. 35. PANAMA CANAL ZONE
9.4°N, 79.9°W MARCH 1956

NBS 503

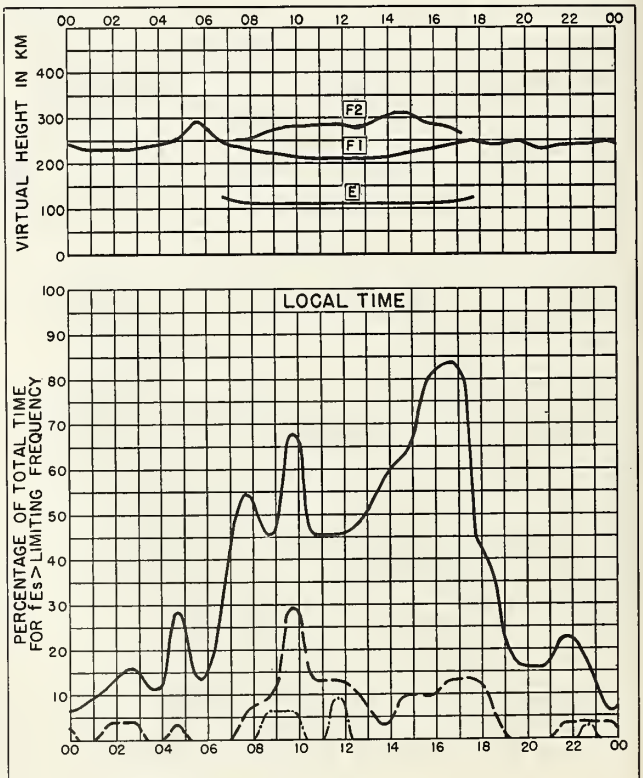


Fig. 36. PANAMA CANAL ZONE MARCH 1956

NBS 490

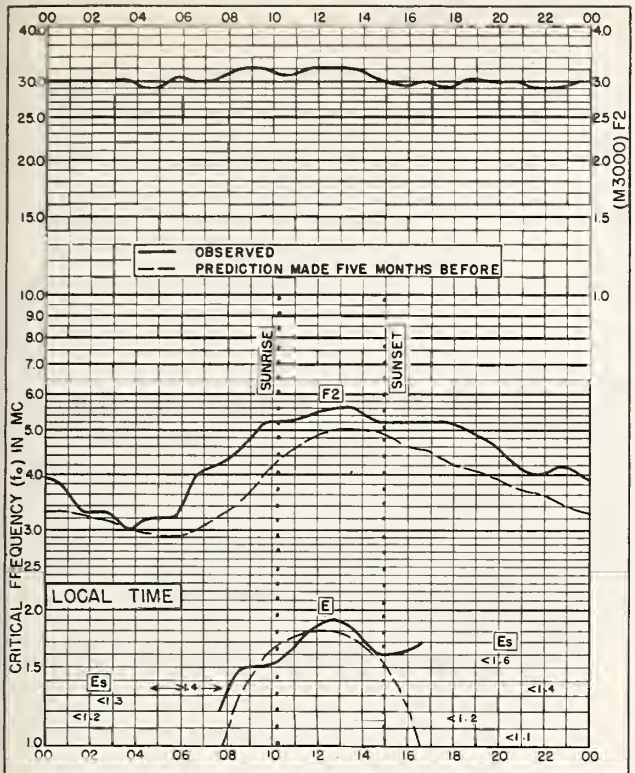


Fig. 37. RESOLUTE BAY, CANADA
74.7°N, 94.9°W FEBRUARY 1956

NBS 503

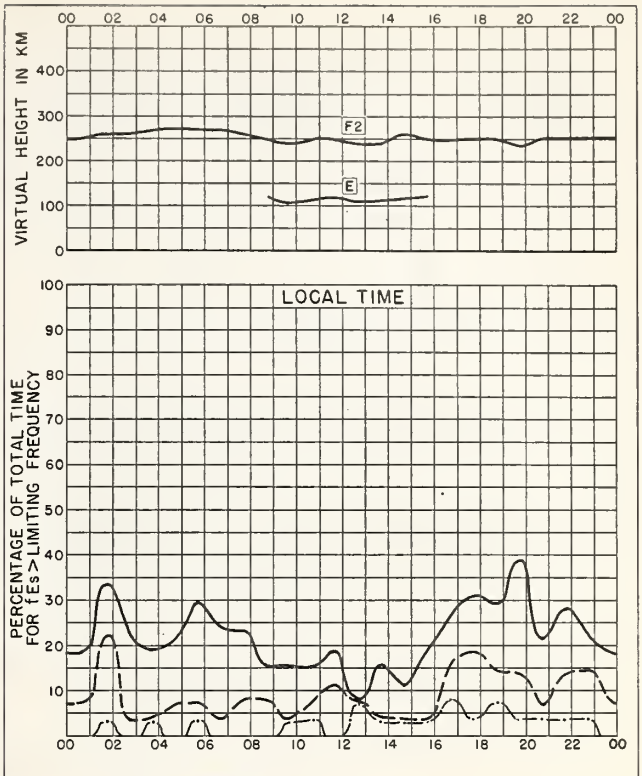


Fig. 38. RESOLUTE BAY, CANADA FEBRUARY 1956

NBS 490

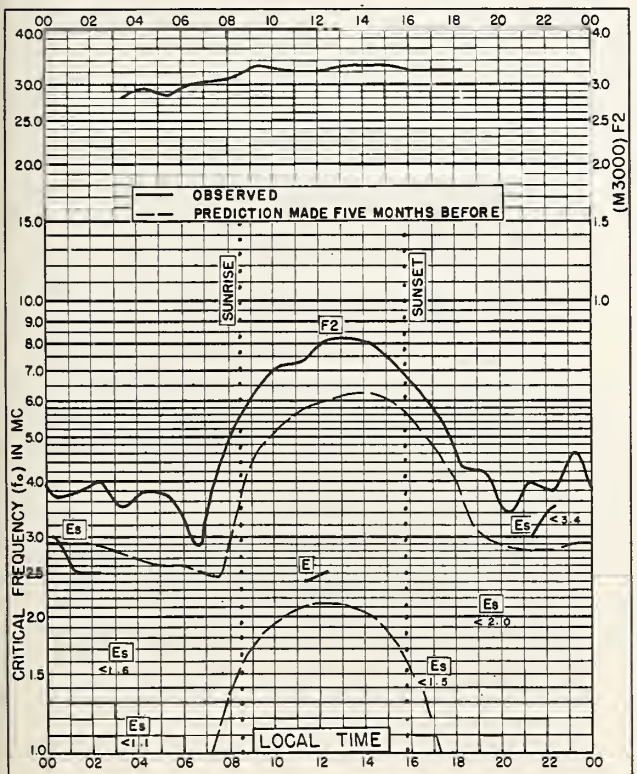


Fig. 39. KIRUNA, SWEDEN
67.8°N, 20.3°E FEBRUARY 1956

NBS 503

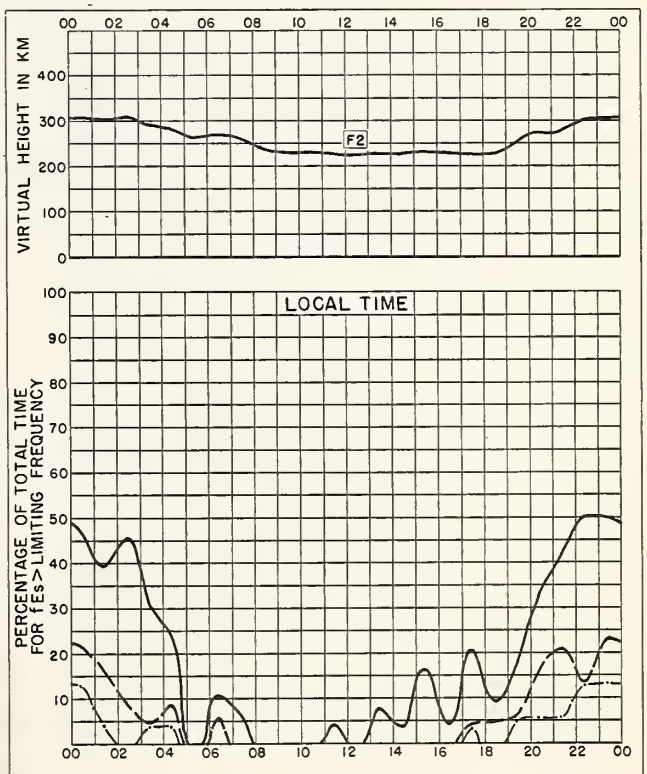


Fig. 40. KIRUNA, SWEDEN FEBRUARY 1956

NBS 490

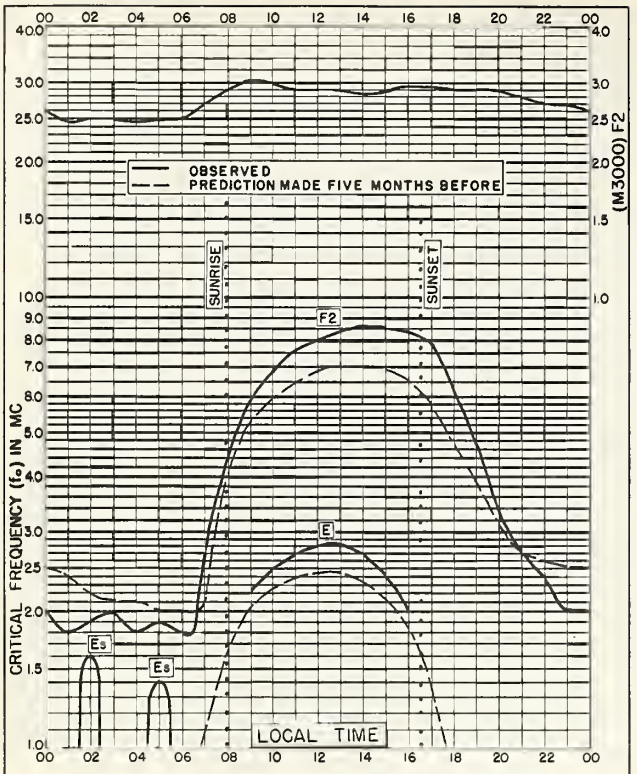


Fig. 41. ANCHORAGE, ALASKA
61.2°N, 149.9°W FEBRUARY 1956

NBS 503

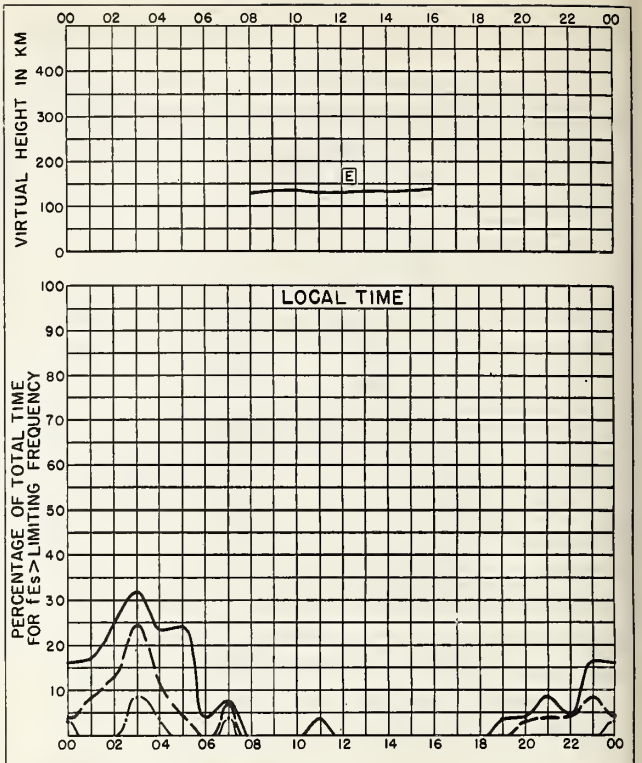


Fig. 42. ANCHORAGE, ALASKA FEBRUARY 1956

NBS 490

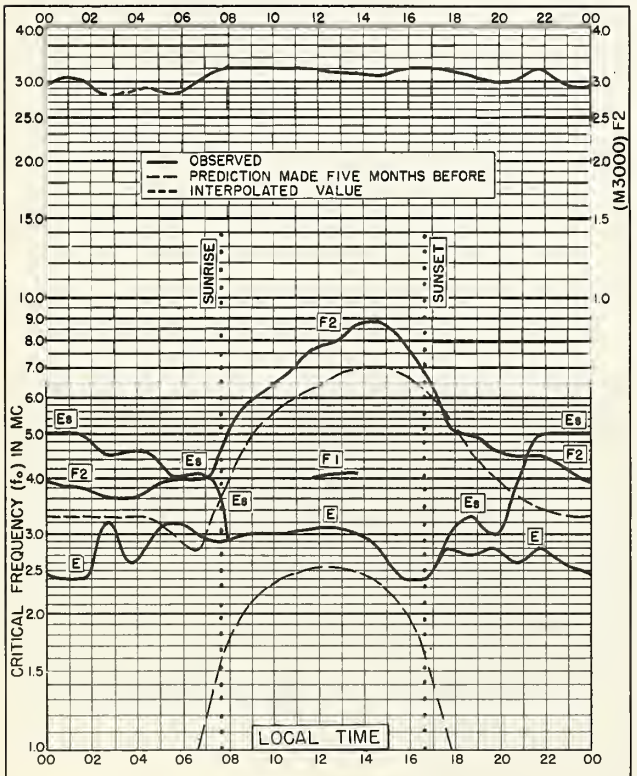


Fig. 43. CHURCHILL, CANADA
58.8°N, 94.2°W FEBRUARY 1956

NBS 503

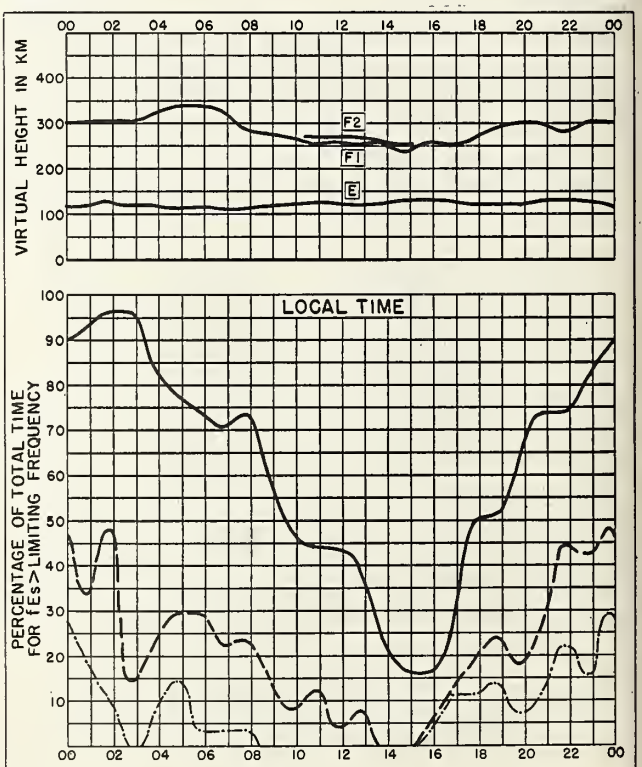


Fig. 44. CHURCHILL, CANADA FEBRUARY 1956

NBS 490

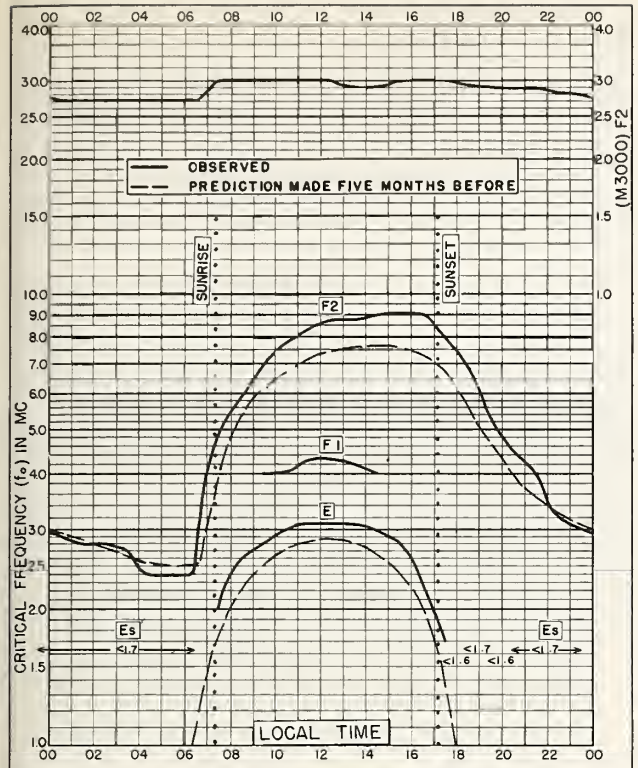


Fig. 45. WINNIPEG, CANADA
49.9°N, 97.4°W FEBRUARY 1956

NBS 503

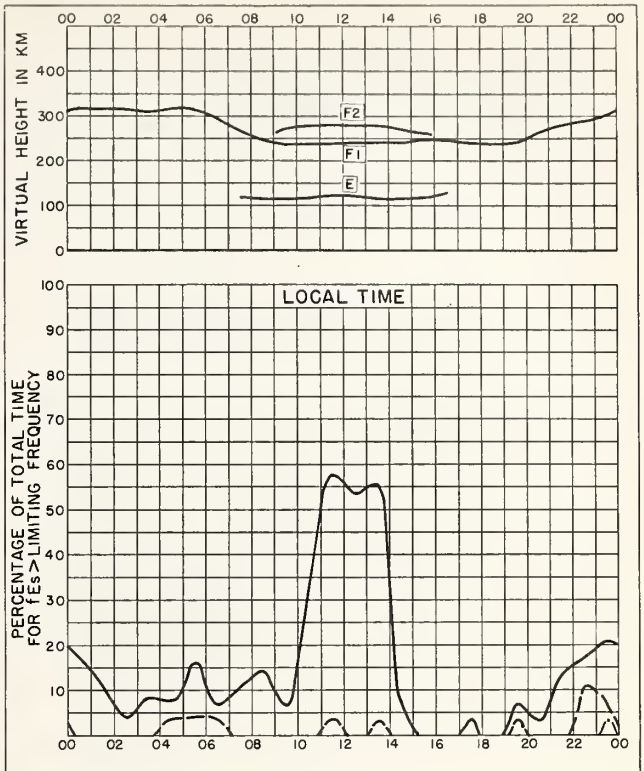


Fig. 46. WINNIPEG, CANADA FEBRUARY 1956

NBS 490

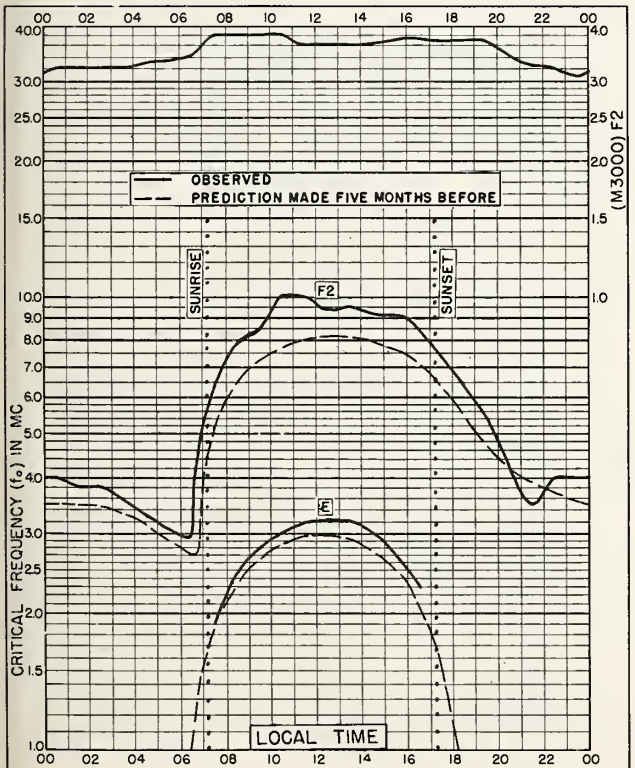


Fig. 47. SCHWARZENBURG, SWITZERLAND
46.8°N, 7.3°E FEBRUARY 1956

NBS 503

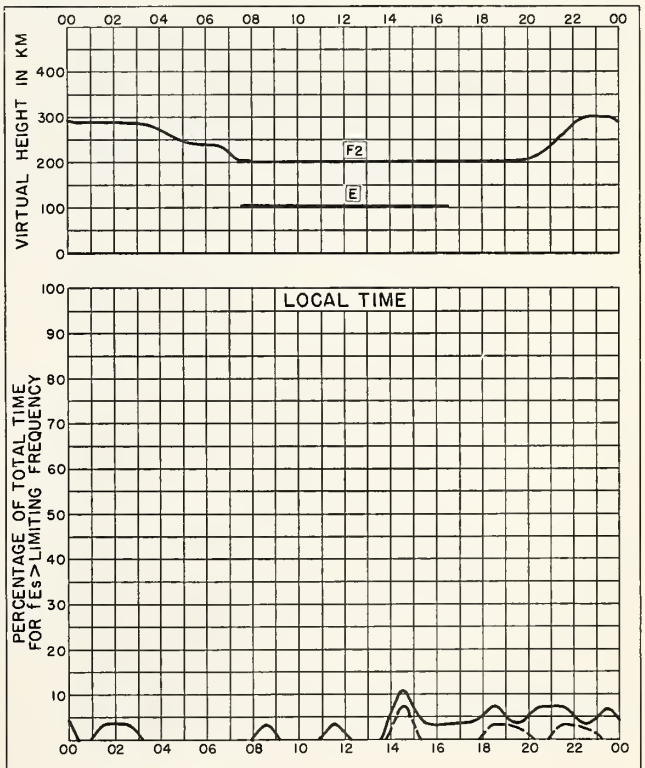


Fig. 48. SCHWARZENBURG, SWITZERLAND FEBRUARY 1956

NBS 490

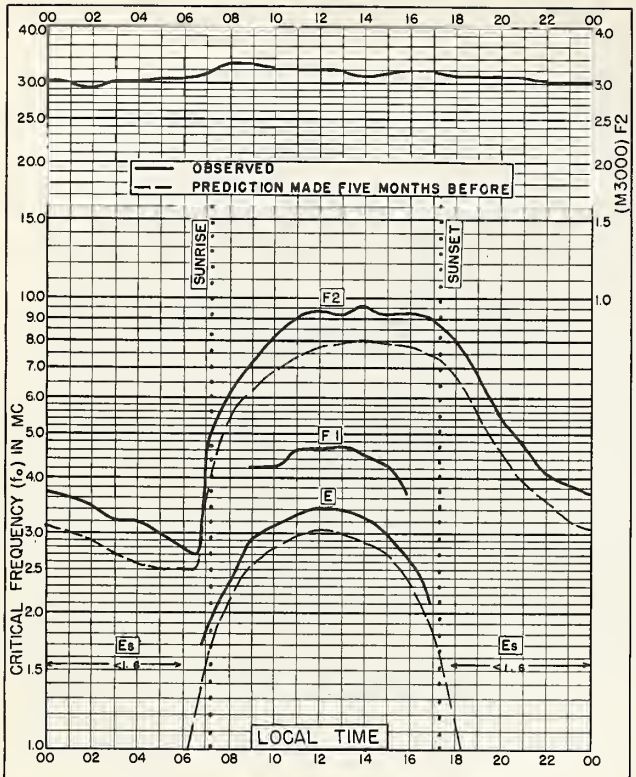


Fig. 49. OTTAWA, CANADA
45.4°N, 75.9°W FEBRUARY 1956

NBS 503

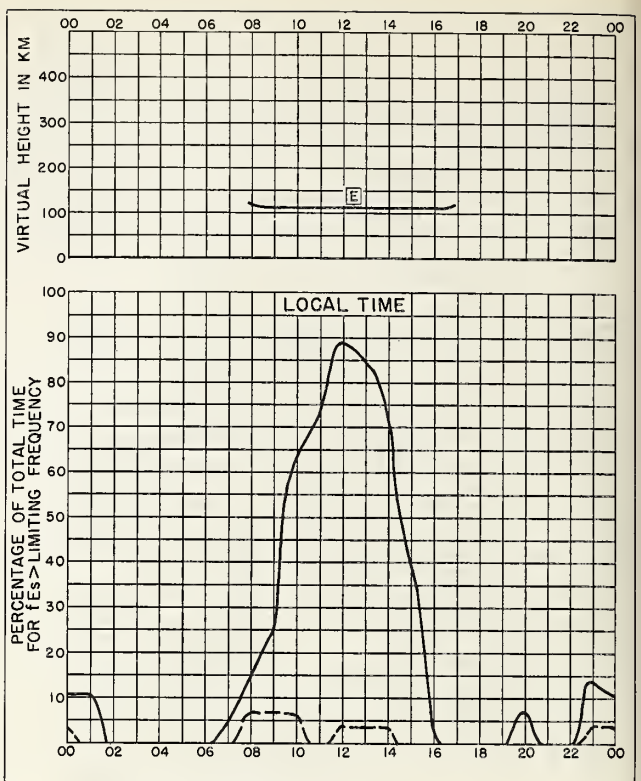


Fig. 50. OTTAWA, CANADA FEBRUARY 1956

NBS 490

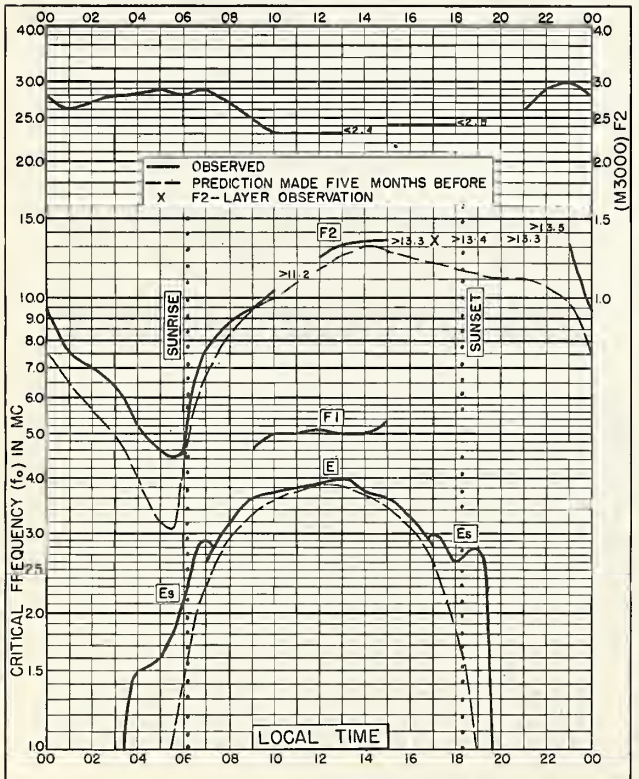


Fig. 51. LEOPOLDVILLE, BELGIAN CONGO
4.4°S, 15.2°E FEBRUARY 1956

NBS 503

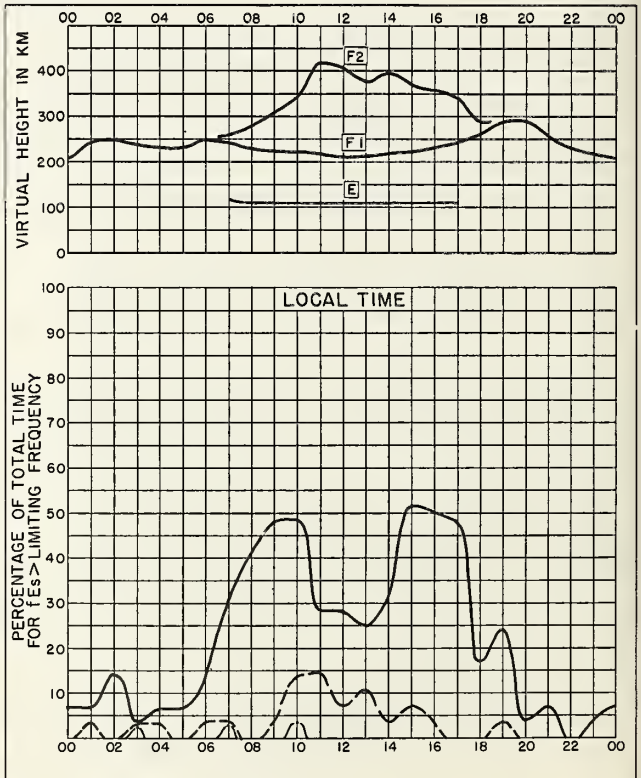


Fig. 52. LEOPOLDVILLE, BELGIAN CONGO FEBRUARY 1956

NBS 490

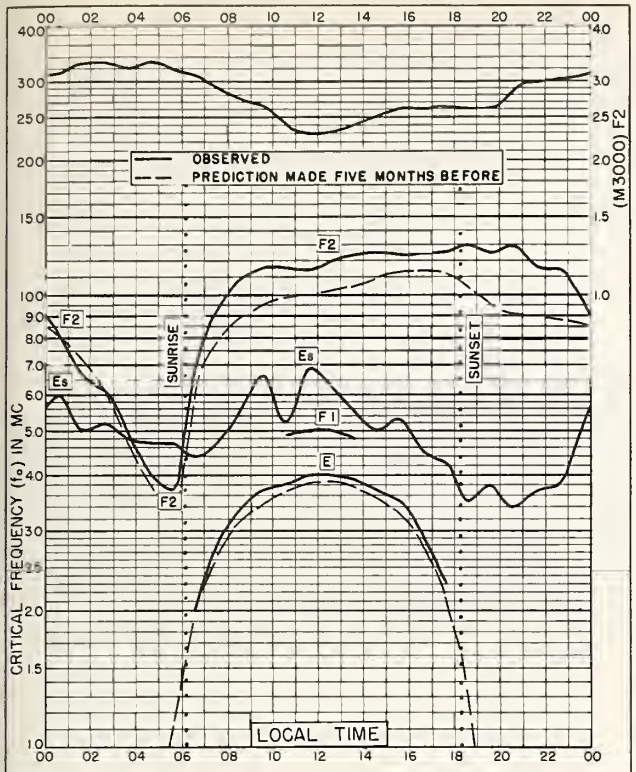


Fig. 53. TALARA, PERU
4.6°S, 81.3°W FEBRUARY 1956

NBS 503

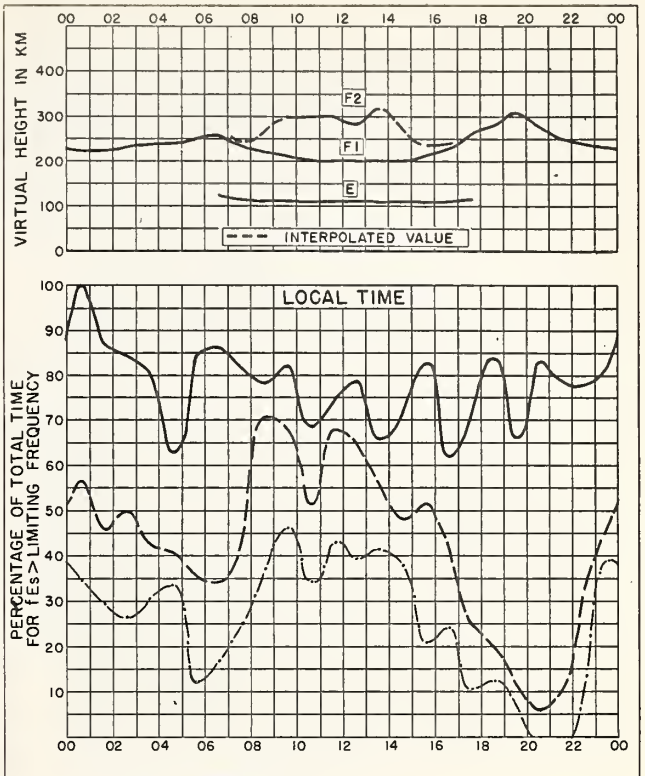


Fig. 54. TALARA, PERU FEBRUARY 1956

NBS 490

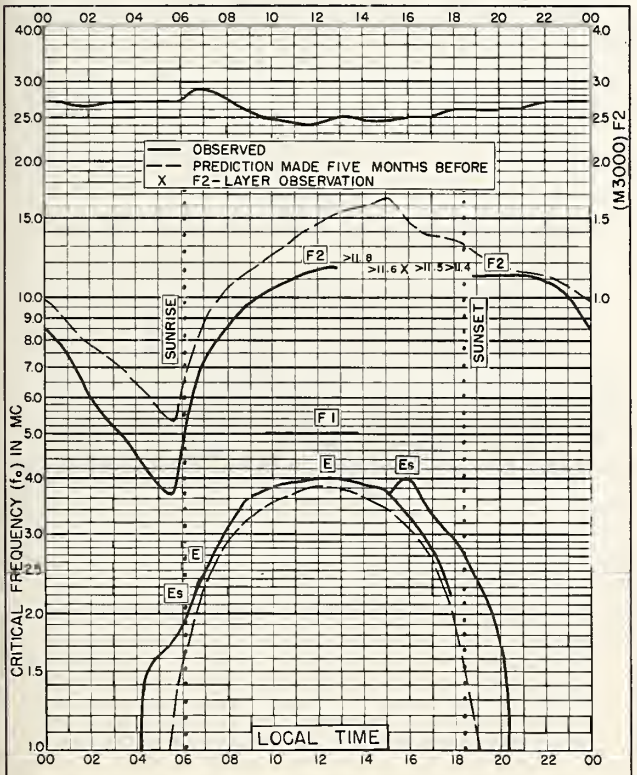


Fig. 55. ELISABETHVILLE, BELGIAN CONGO
11.6°S, 27.5°E FEBRUARY 1956

NBS 503

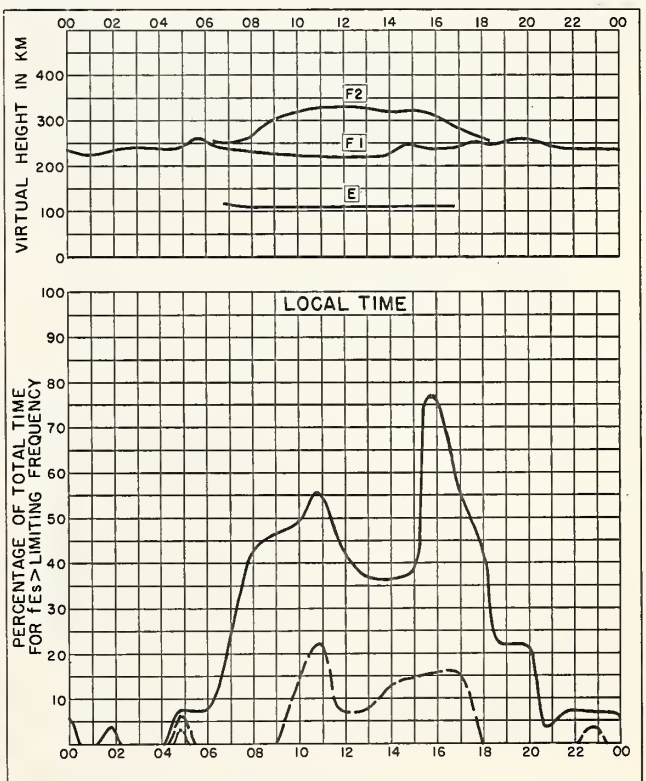


Fig. 56. ELISABETHVILLE, BELGIAN CONGO FEBRUARY 1956

NBS 490

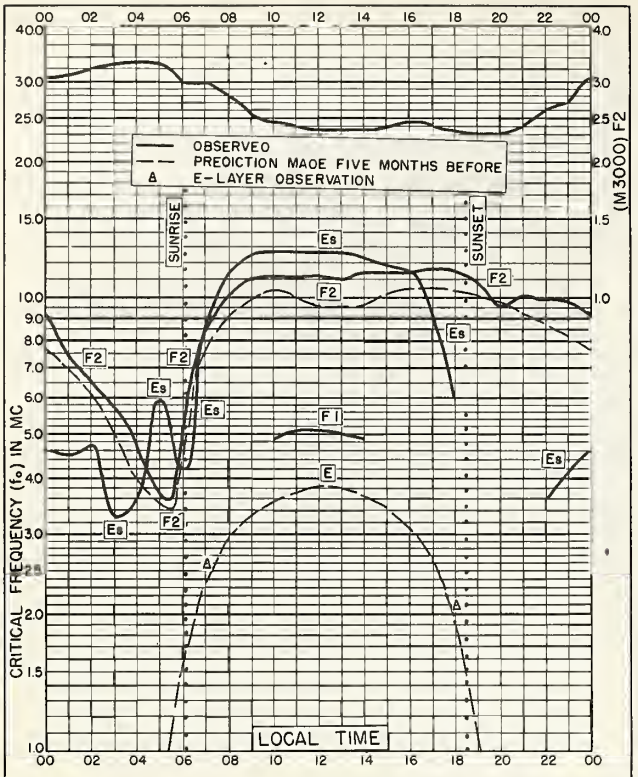


Fig. 57. HUANCAYO, PERU
12.0°S, 75.3°W FEBRUARY 1956

NBS 503

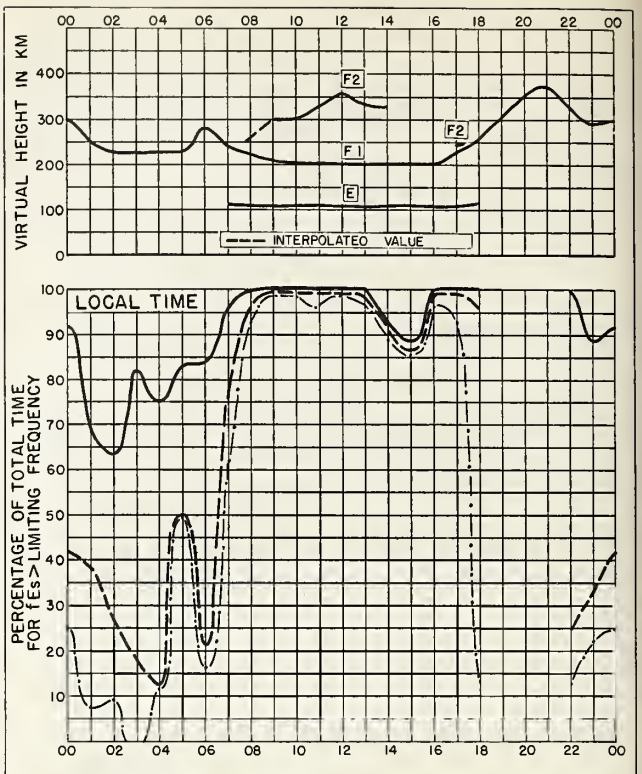


Fig. 58. HUANCAYO, PERU FEBRUARY 1956

NBS 490

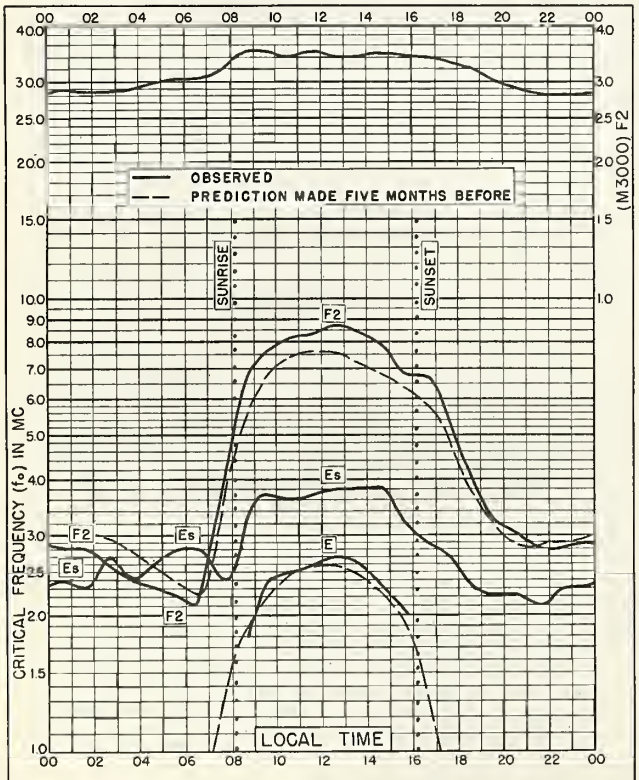


Fig. 59. LINDAU/HARZ, GERMANY
51.6°N, 10.1°E JANUARY 1956

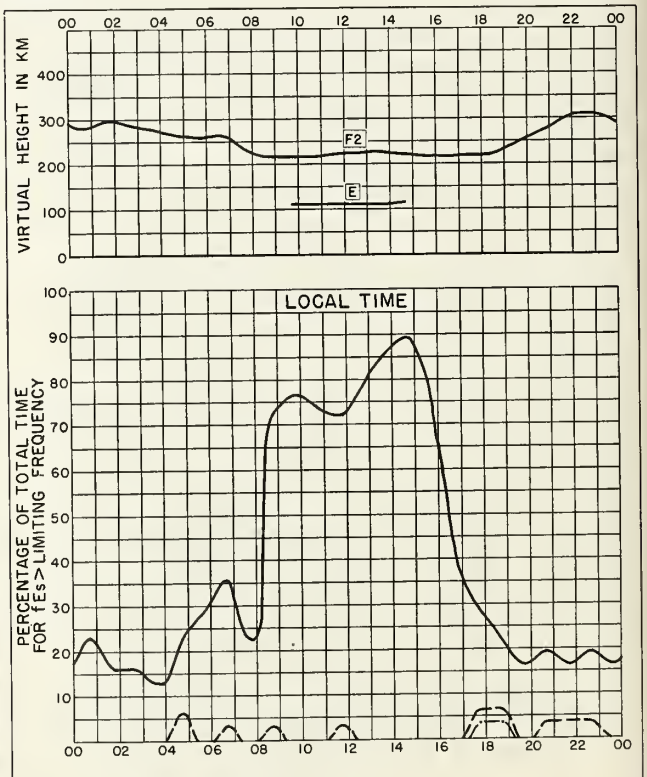


Fig. 60. LINDAU/HARZ, GERMANY JANUARY 1956

NBS 490

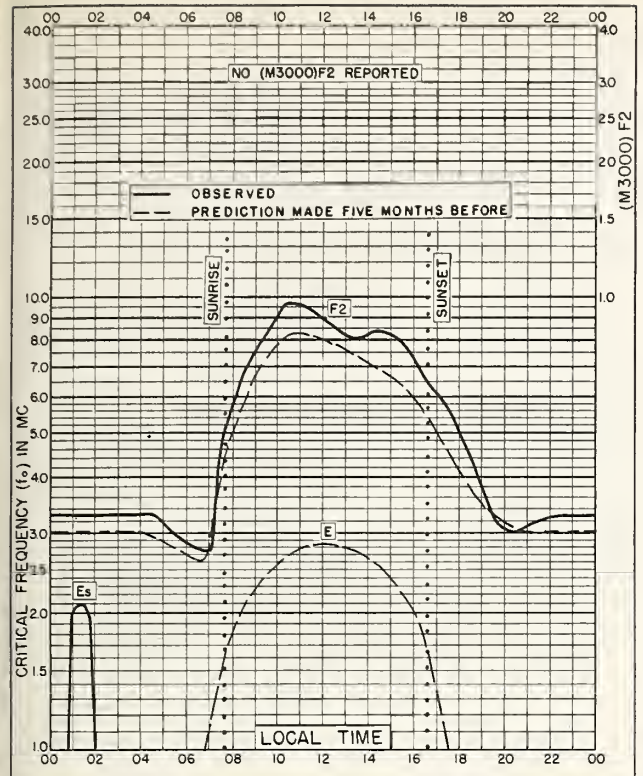


Fig. 61. WAKKANAI, JAPAN
45.4°N, 141.7°E JANUARY 1956

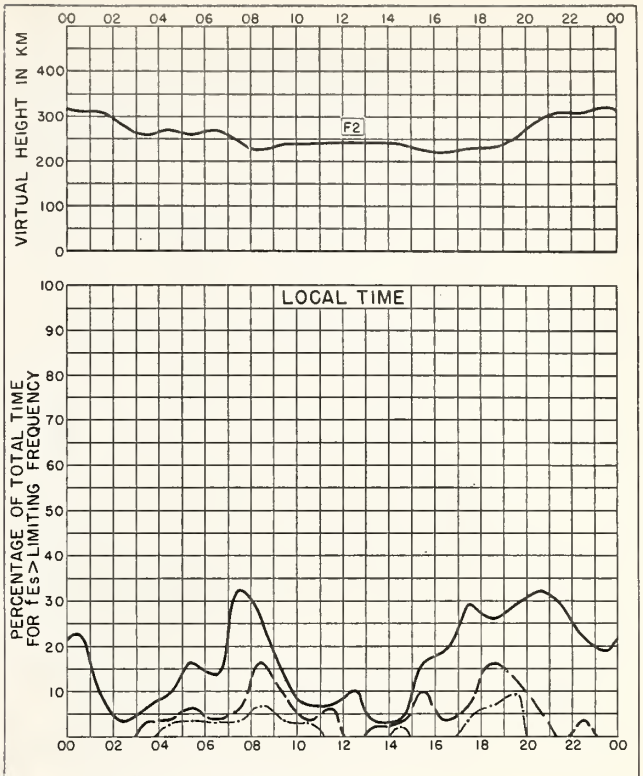


Fig. 62. WAKKANAI, JAPAN JANUARY 1956

NBS 490

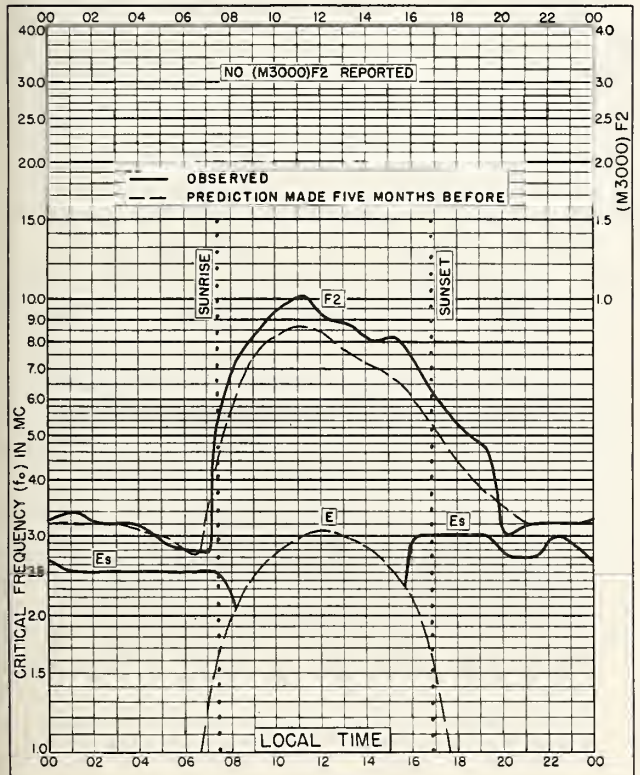


Fig. 63. AKITA, JAPAN
39.7°N, 140.1°E JANUARY 1956

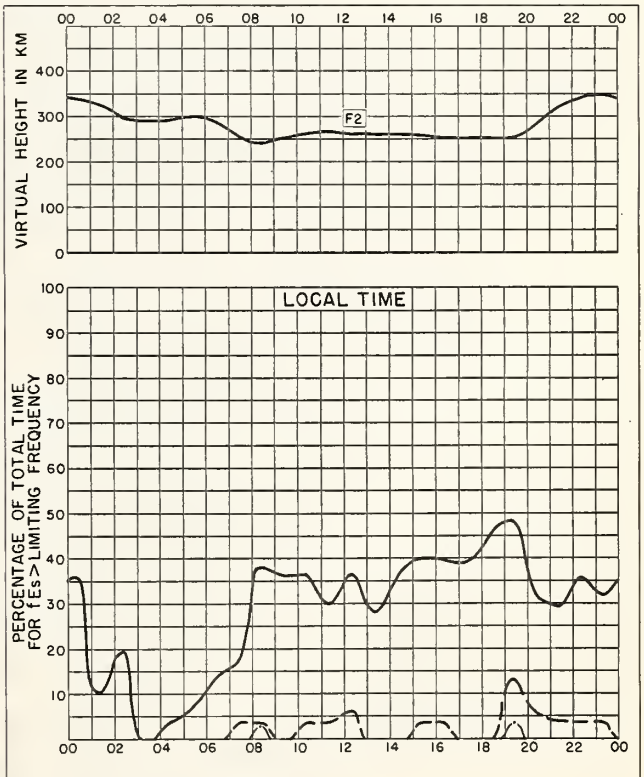


Fig. 64. AKITA, JAPAN JANUARY 1956

NBS 490

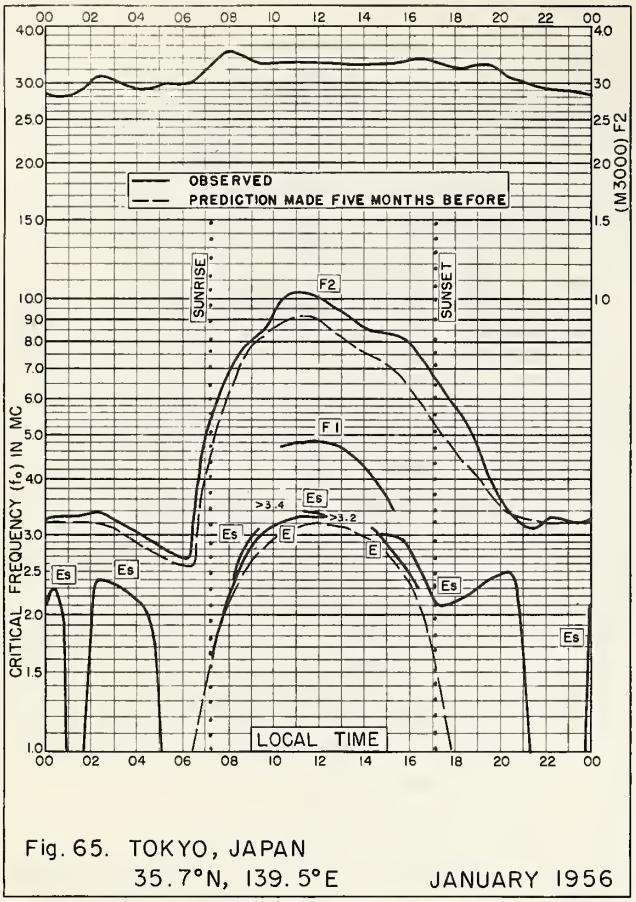


Fig. 65. TOKYO, JAPAN
35.7°N, 139.5°E JANUARY 1956

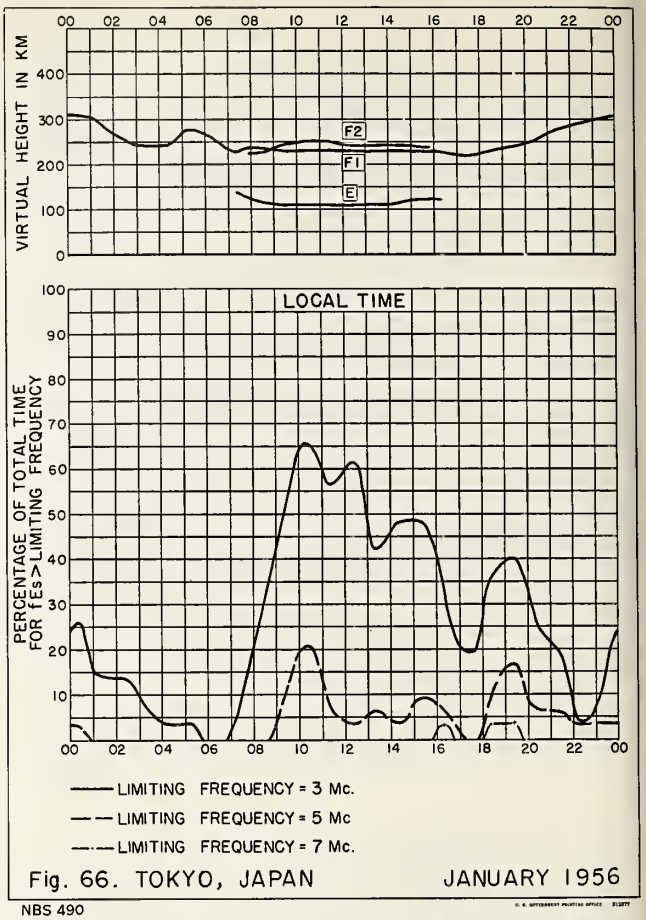


Fig. 66. TOKYO, JAPAN JANUARY 1956

NBS 490

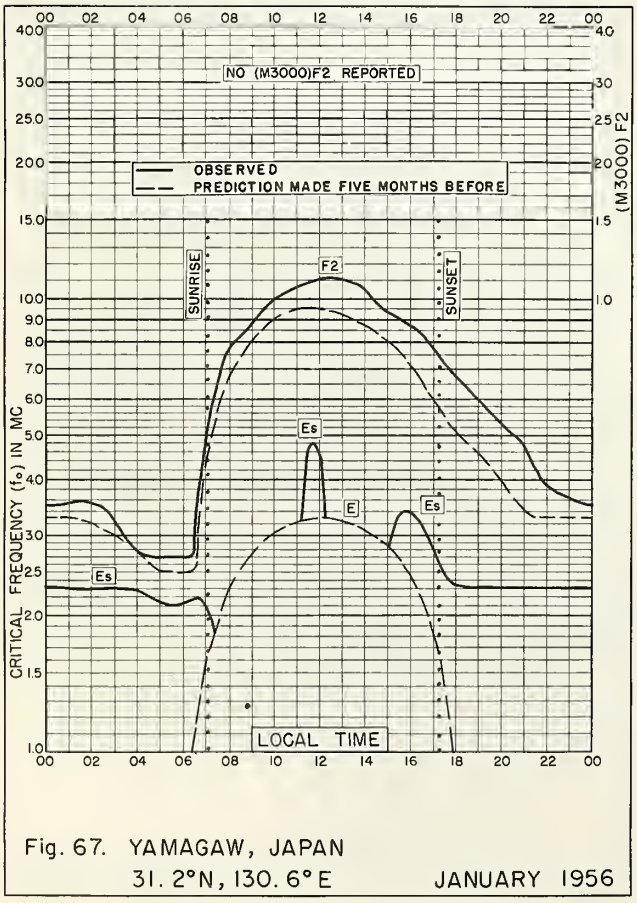


Fig. 67. YAMAGAW, JAPAN
31.2°N, 130.6°E JANUARY 1956

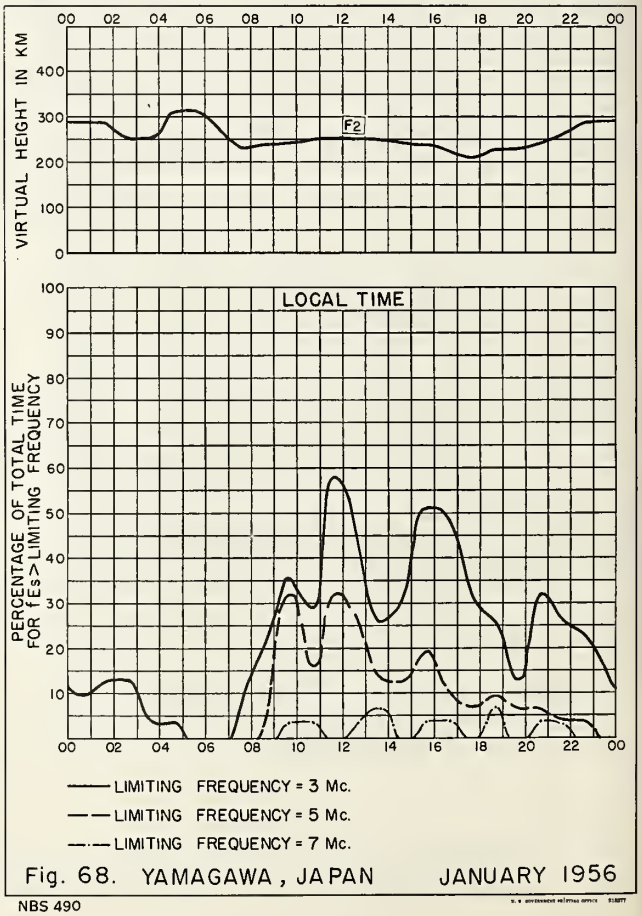


Fig. 68. YAMAGAWA, JAPAN JANUARY 1956

NBS 490

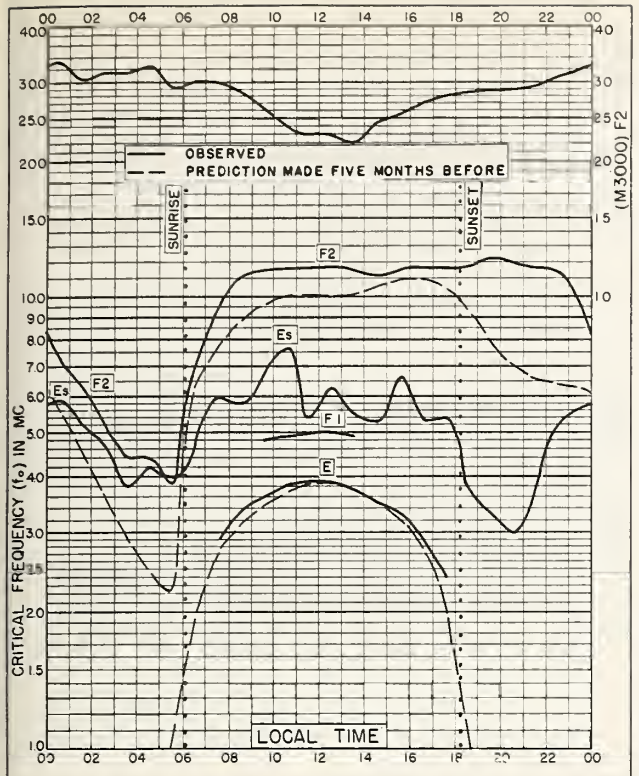


Fig. 69. TALARA, PERU
4.6°S, 81.3°W JANUARY 1956

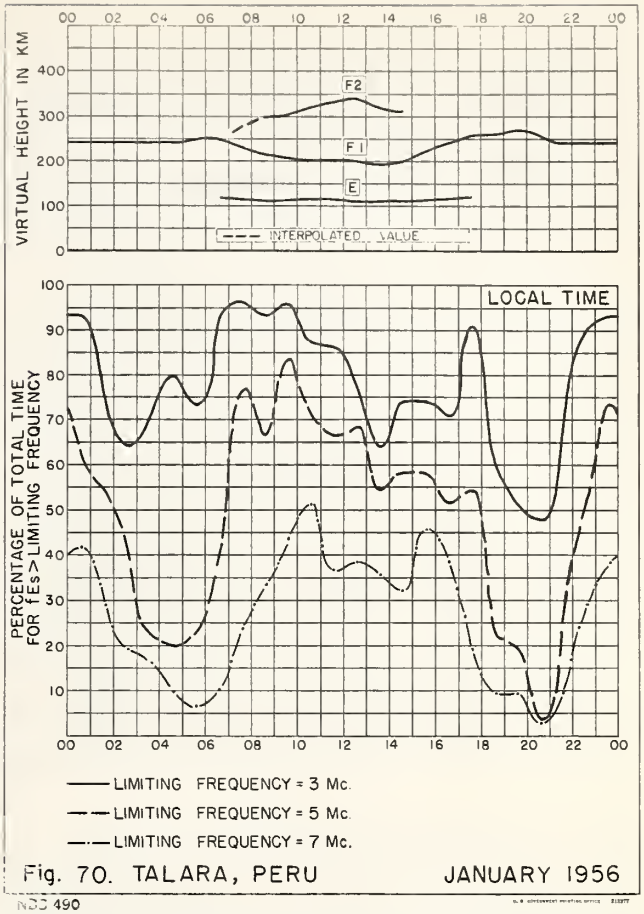


Fig. 70. TALARA, PERU JANUARY 1956

NBS 490

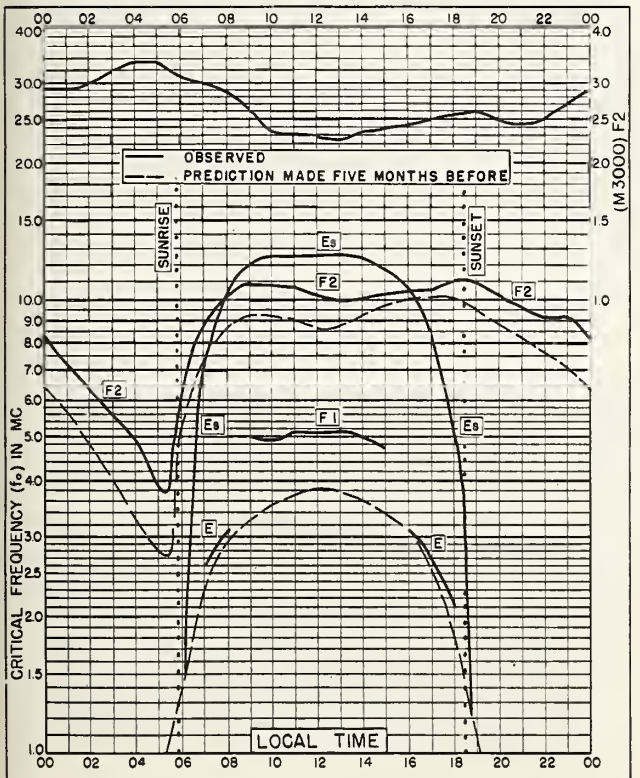


Fig. 71. HUANCAYO, PERU
12.0°S, 75.3°W JANUARY 1956

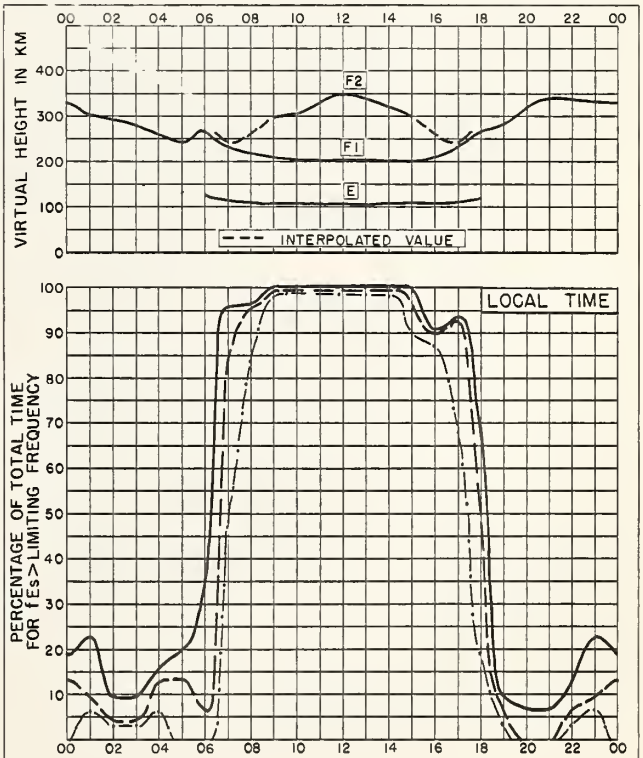


Fig. 72. HUANCAYO, PERU JANUARY 1956

NBS 490

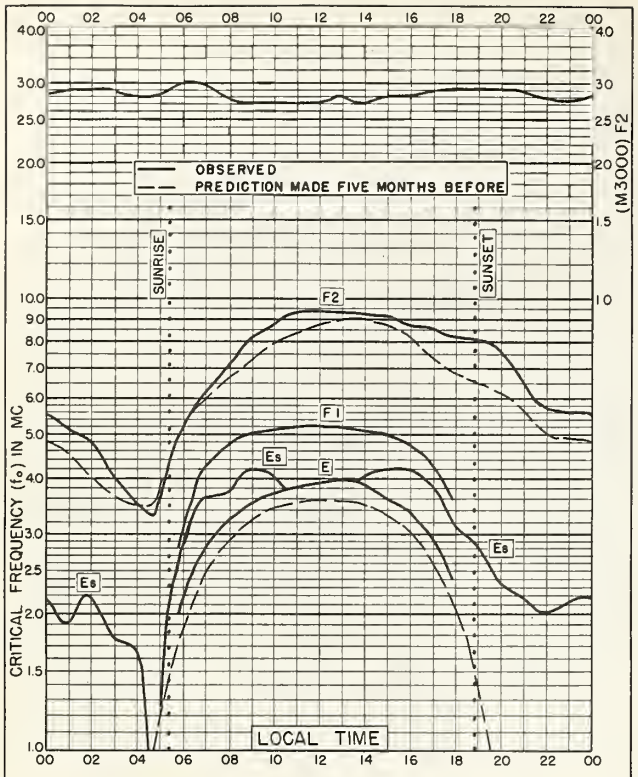
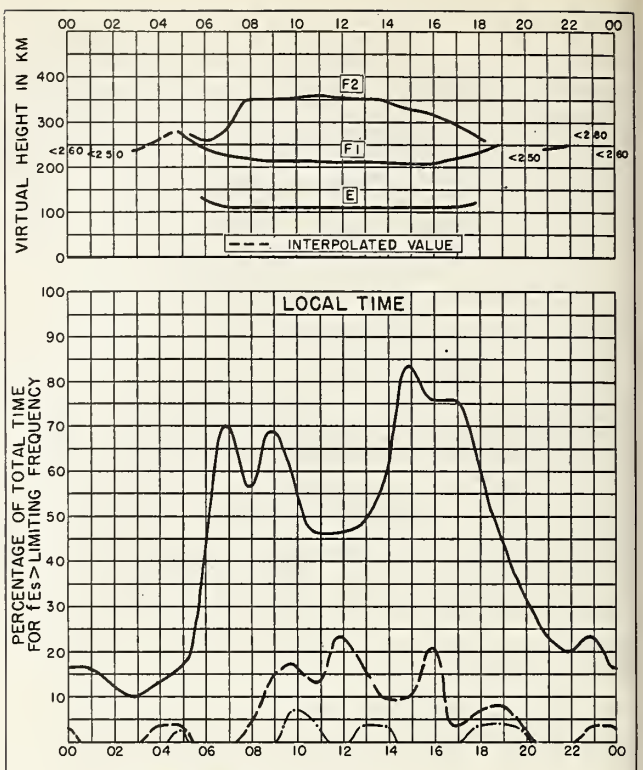


Fig. 73. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E JANUARY 1956



JANUARY 1956

Fig. 74. JOHANNESBURG, UNION OF S. AFRICA

NBS 490

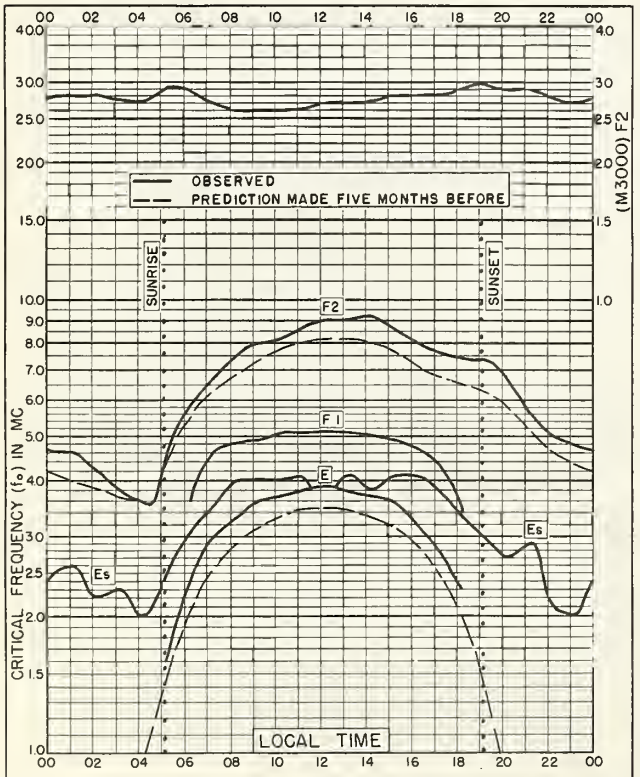
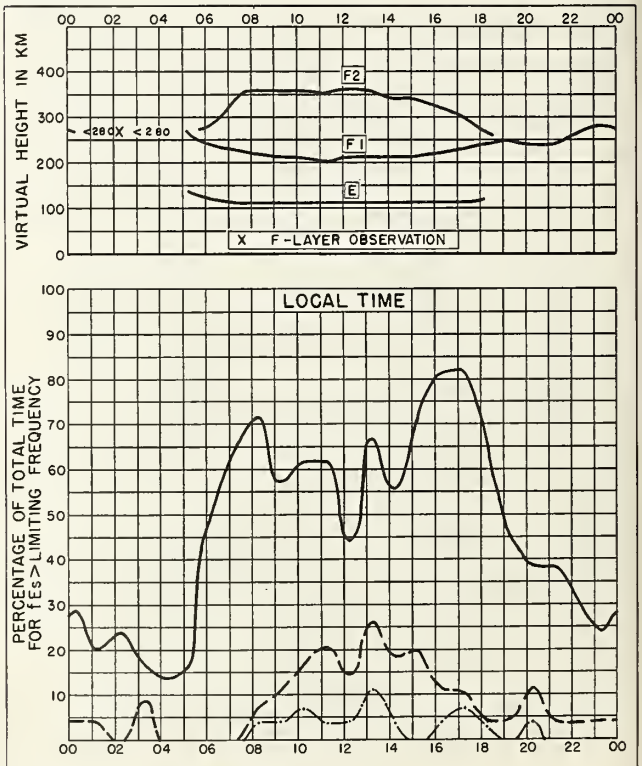


Fig. 75. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E JANUARY 1956



JANUARY 1956

Fig. 76. CAPETOWN, UNION OF S. AFRICA

NBS 490

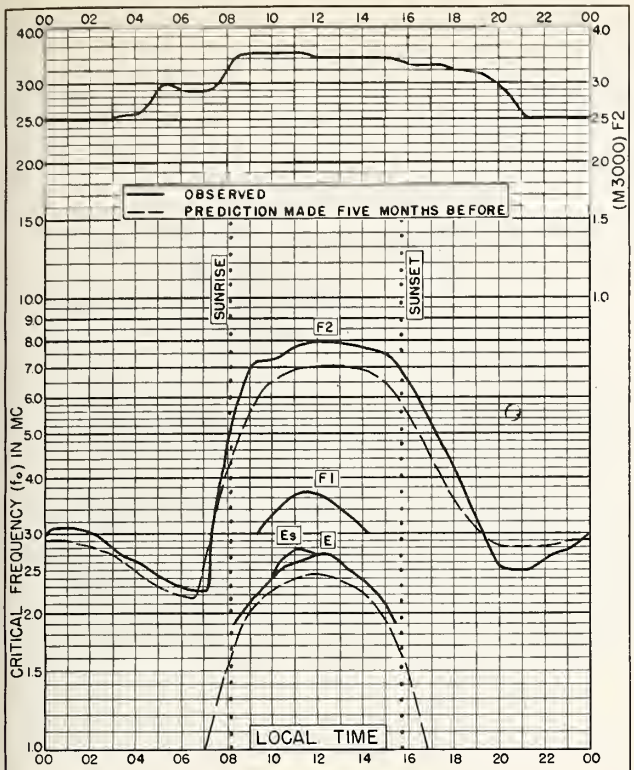


Fig. 77. De BILT, HOLLAND
52.1°N, 5.2°E DECEMBER 1955

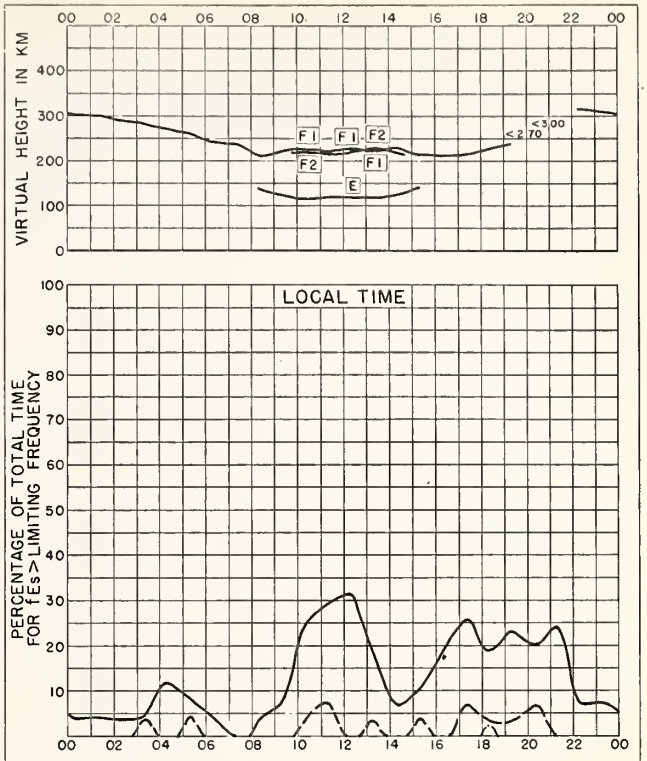


Fig. 78. De BILT, HOLLAND DECEMBER 1955

NBS 490

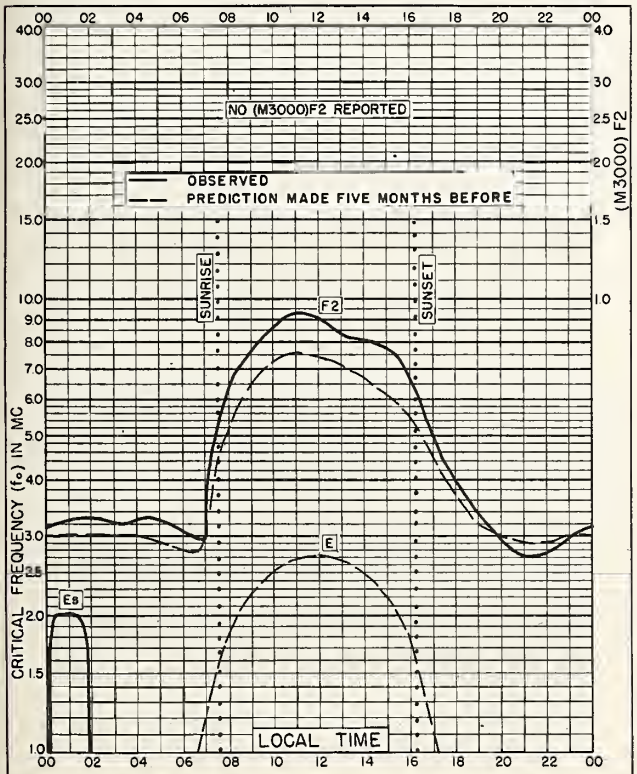


Fig. 79. WAKKANAI, JAPAN
45.4°N, 141.7°E DECEMBER 1955

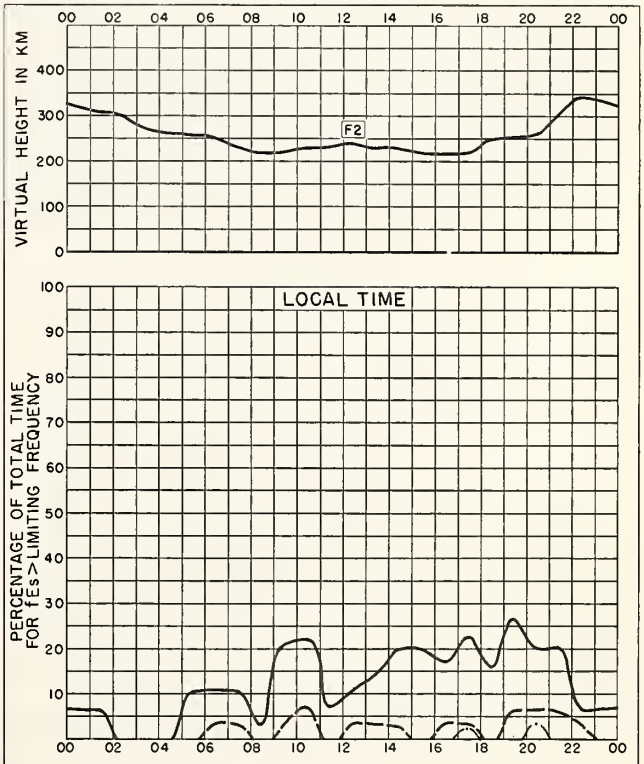


Fig. 80. WAKKANAI, JAPAN DECEMBER 1955

NBS 490

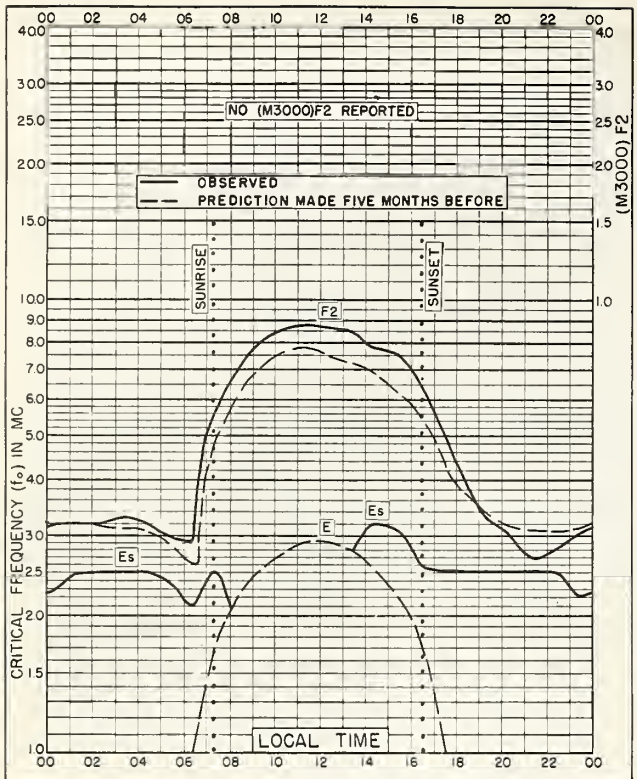


Fig. 81. AKITA, JAPAN
39.7°N, 140.1°E DECEMBER 1955

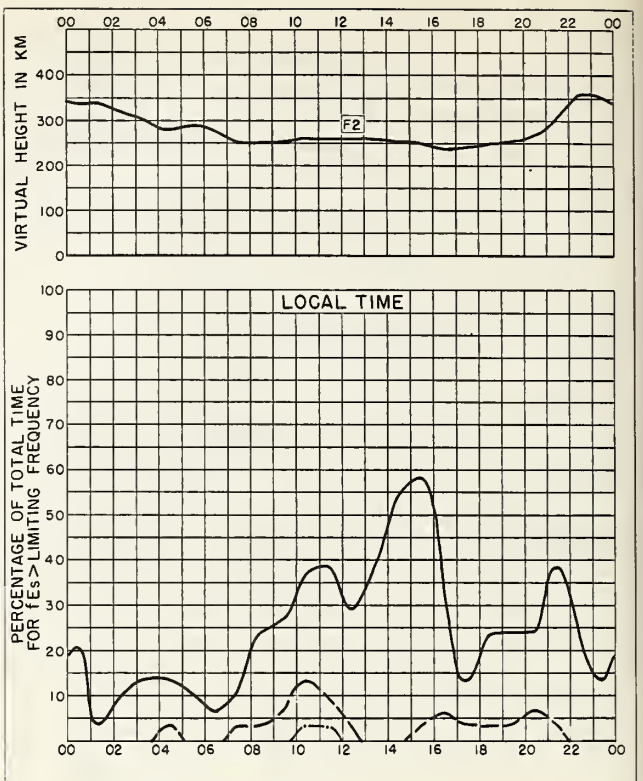


Fig. 82. AKITA, JAPAN DECEMBER 1955

NBS 490

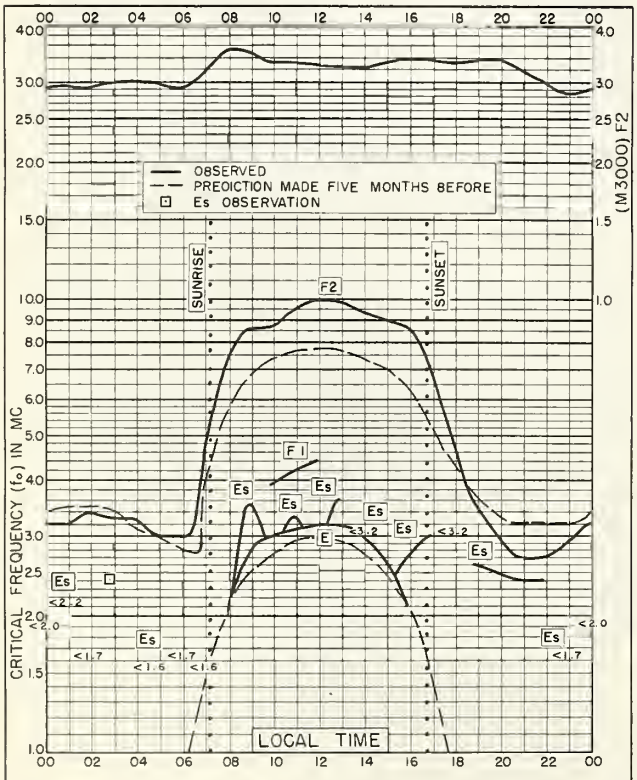


Fig. 83. SAN FRANCISCO, CALIFORNIA
37.4°N, 122.2°W DECEMBER 1955

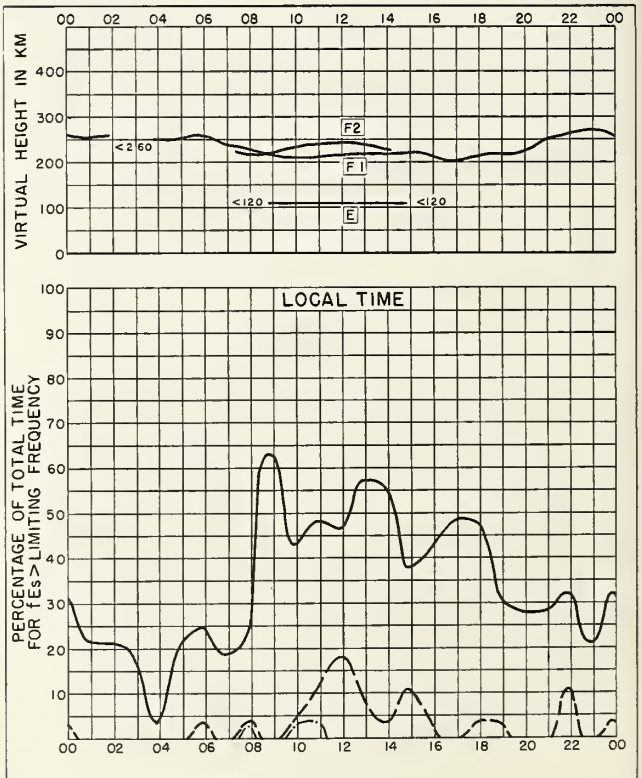


Fig. 84. SAN FRANCISCO, CALIFORNIA DECEMBER 1955

NBS 490

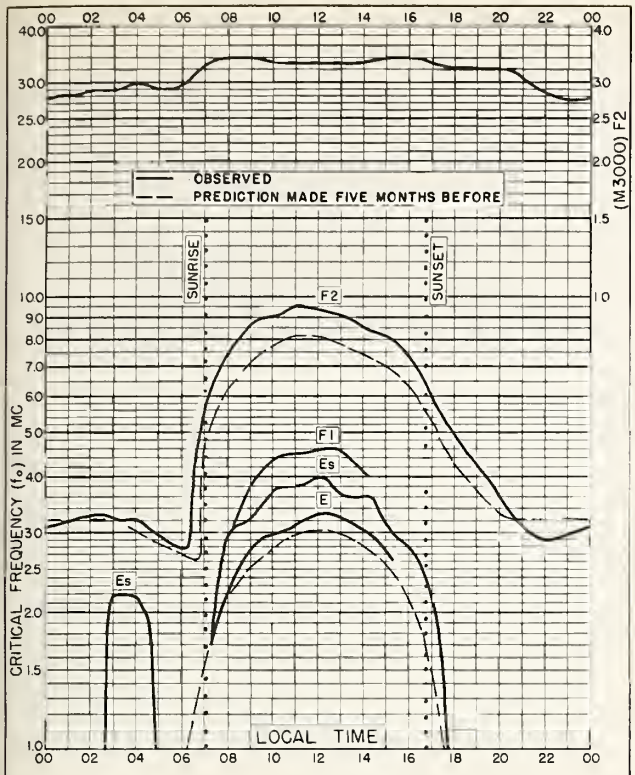


Fig. 85. TOKYO, JAPAN
35.7°N, 139.5°E DECEMBER 1955

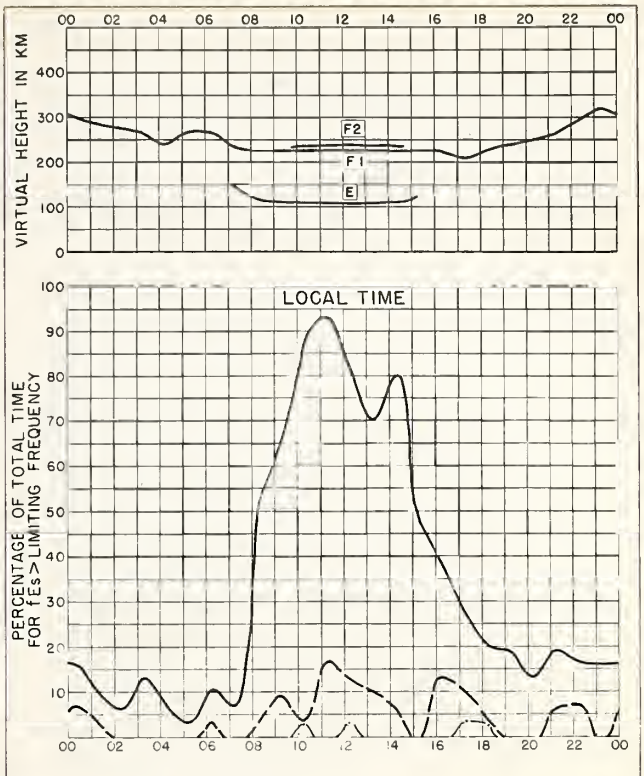


Fig. 86. TOKYO, JAPAN DECEMBER 1955

NBS 490

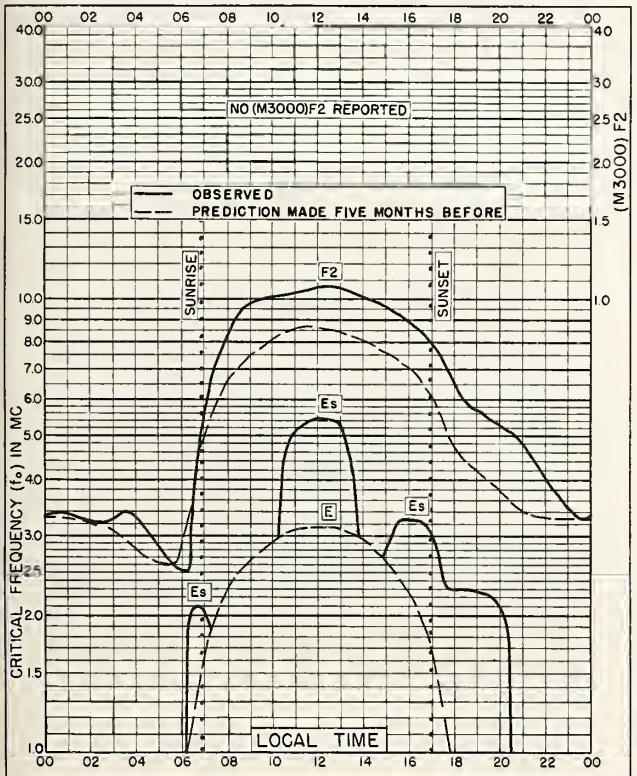


Fig. 87. YAMAGAWA, JAPAN
31.2°N, 130.6°E DECEMBER 1955

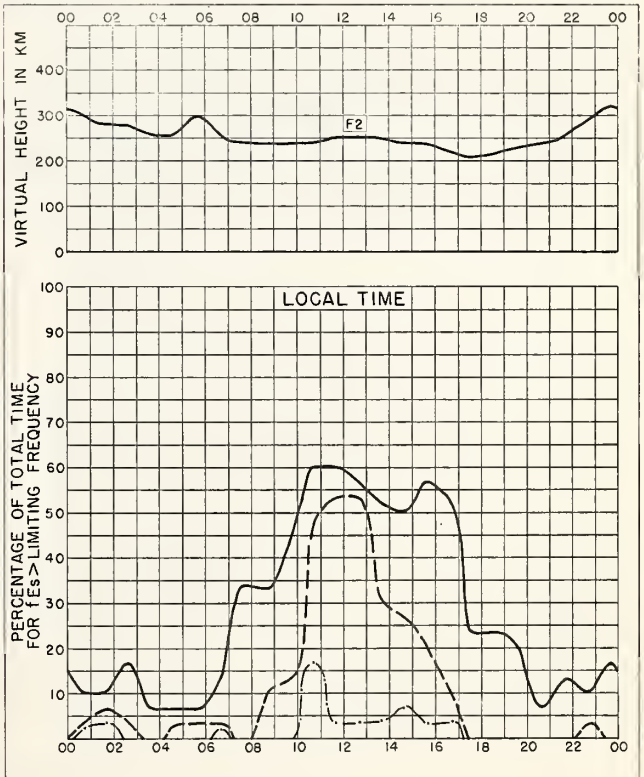


Fig. 88. YAMAGAWA, JAPAN DECEMBER 1955

NBS 490

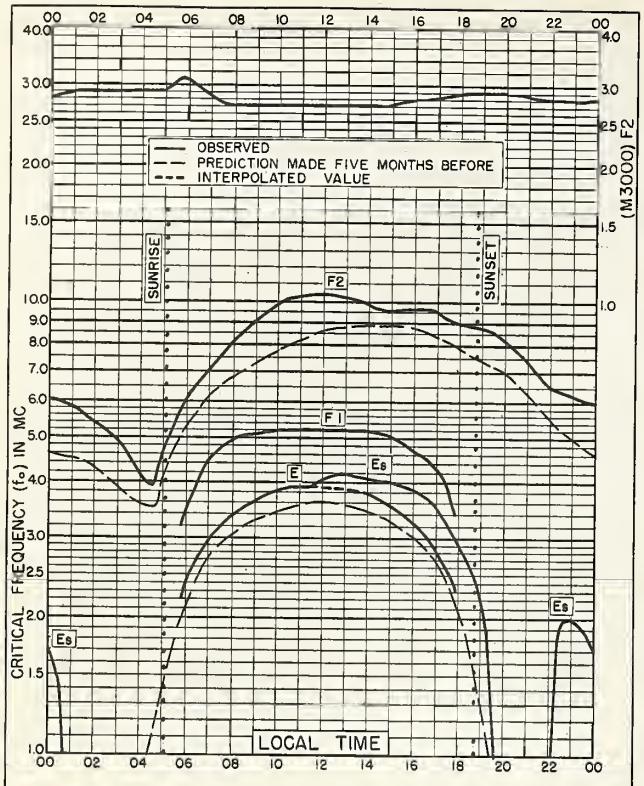


Fig. 89. JOHANNESBURG, UNION OF S. AFRICA
26.2°S, 28.1°E DECEMBER 1955

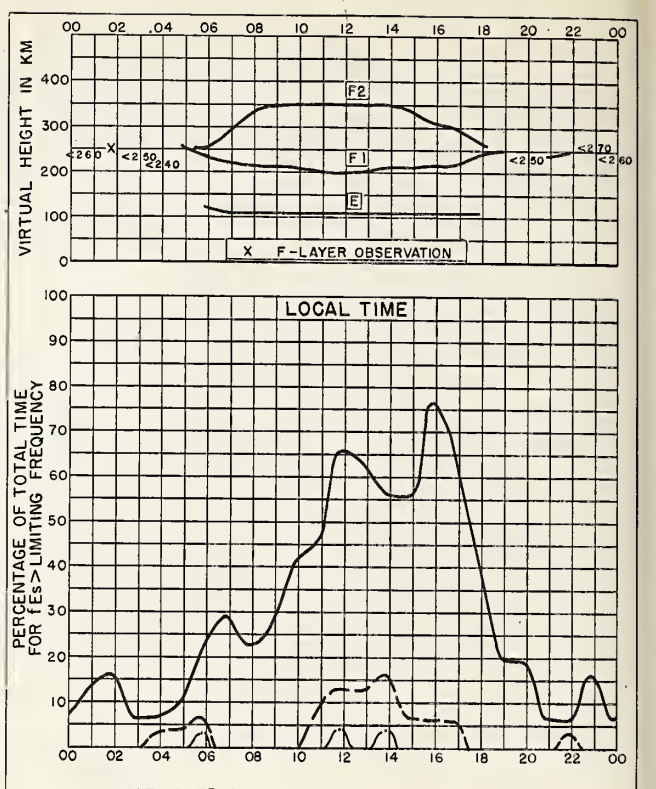


Fig. 90. JOHANNESBURG, UNION OF S. AFRICA DECEMBER 1955

NBS 490

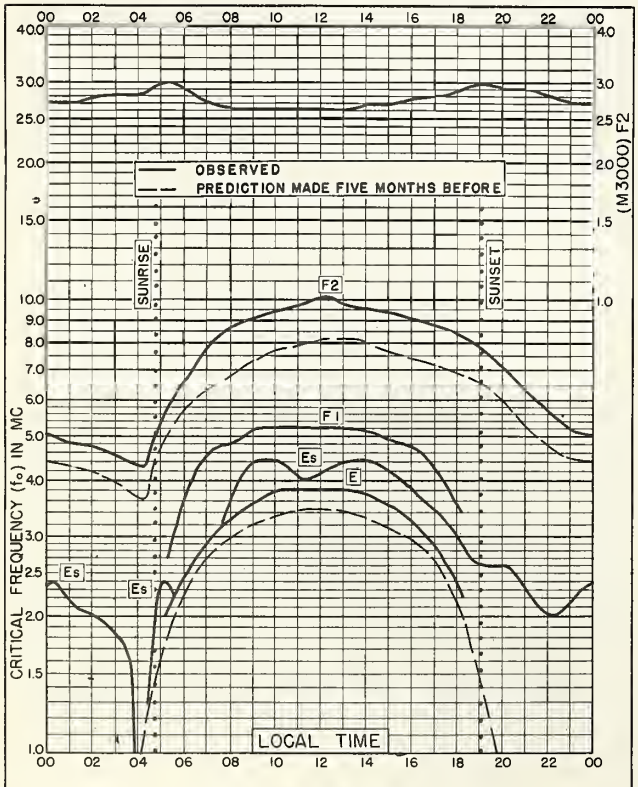


Fig. 91. CAPETOWN, UNION OF S. AFRICA
34.2°S, 18.3°E DECEMBER 1955

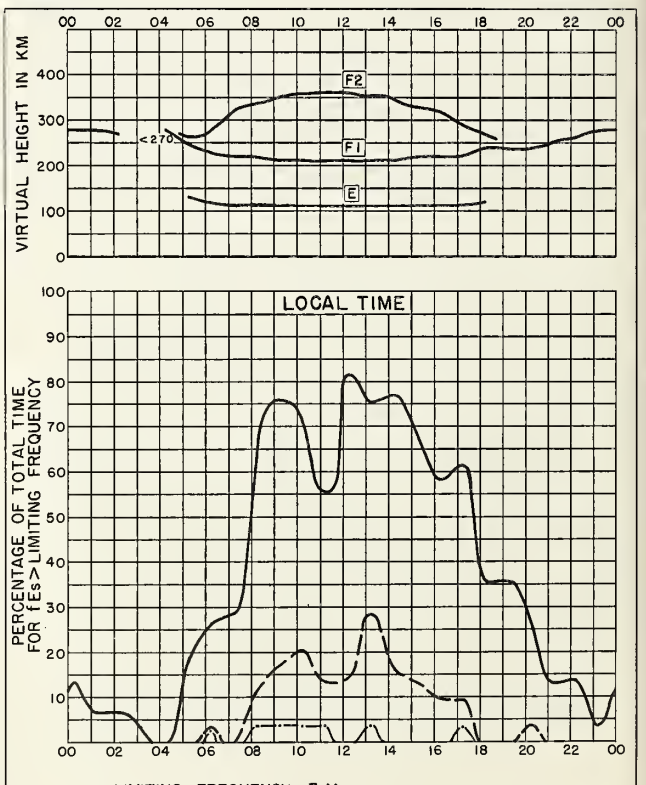


Fig. 92. CAPETOWN, UNION OF S. AFRICA DECEMBER 1955

NBS 490

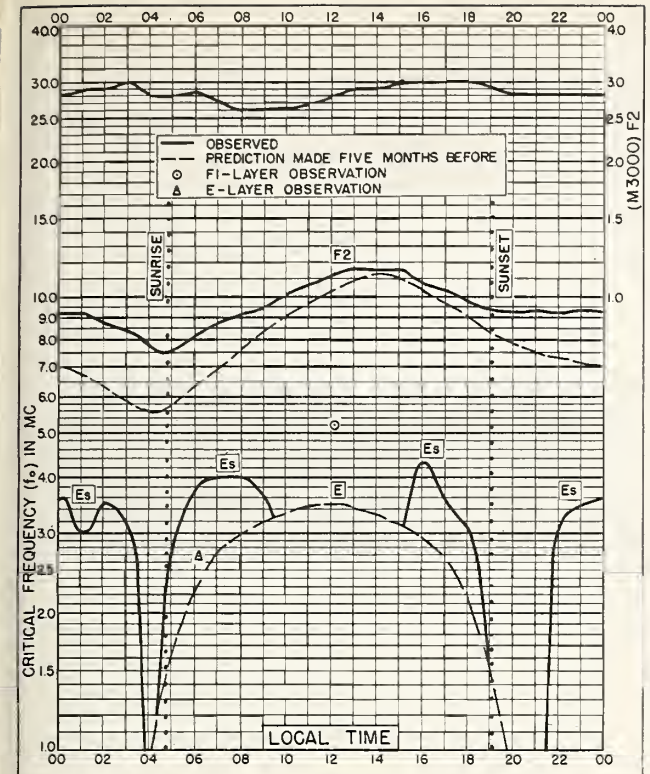
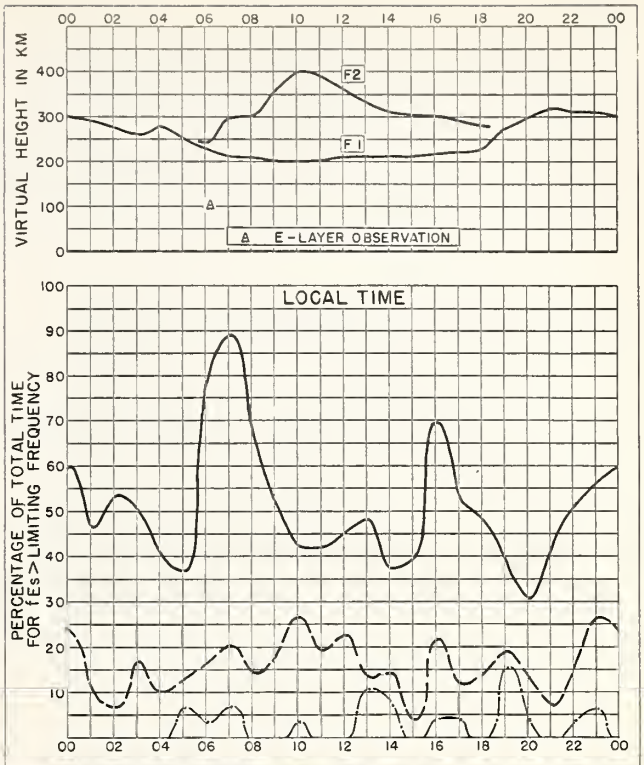


Fig. 93. BUENOS AIRES, ARGENTINA
34.5°S, 58.5°W DECEMBER 1955



DECEMBER 1955

Fig. 94. BUENOS AIRES, ARGENTINA

NBS 490

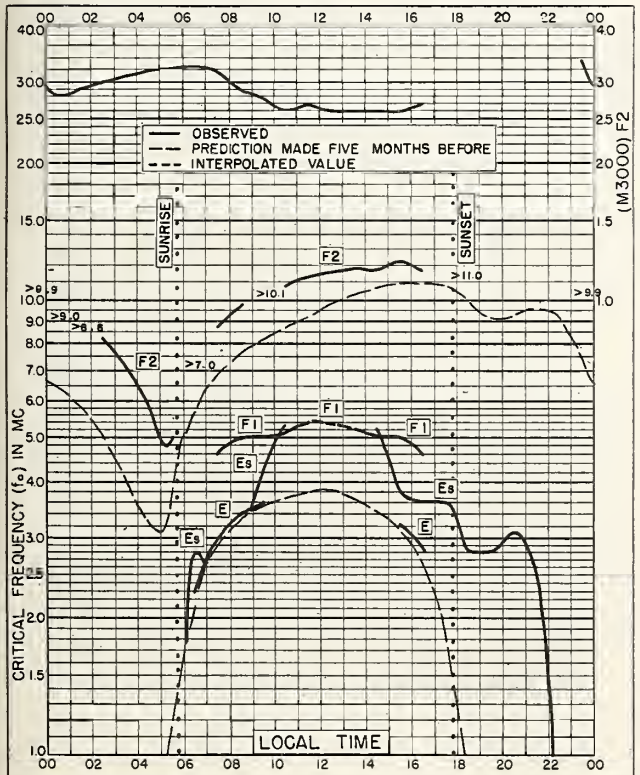


Fig. 95. NAIROBI, KENYA
1.3°S, 36.8°E NOVEMBER 1955

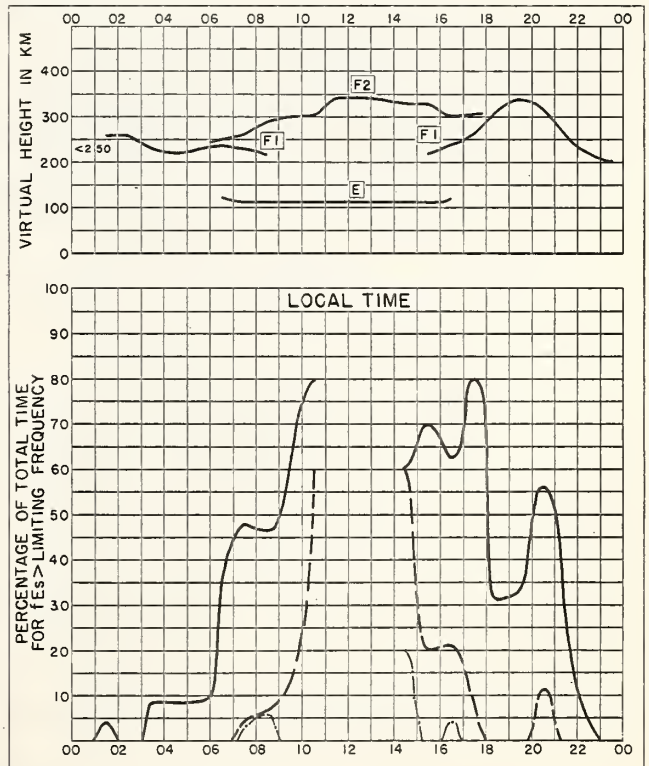


Fig. 96. NAIROBI, KENYA NOVEMBER 1955

NBS 490

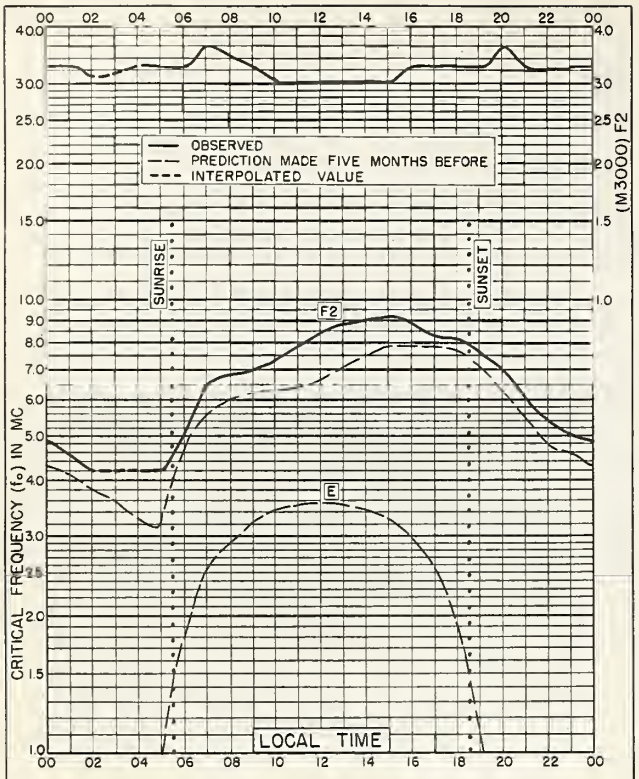


Fig. 97. DELHI, INDIA
28.6°N, 77.1°E AUGUST 1955

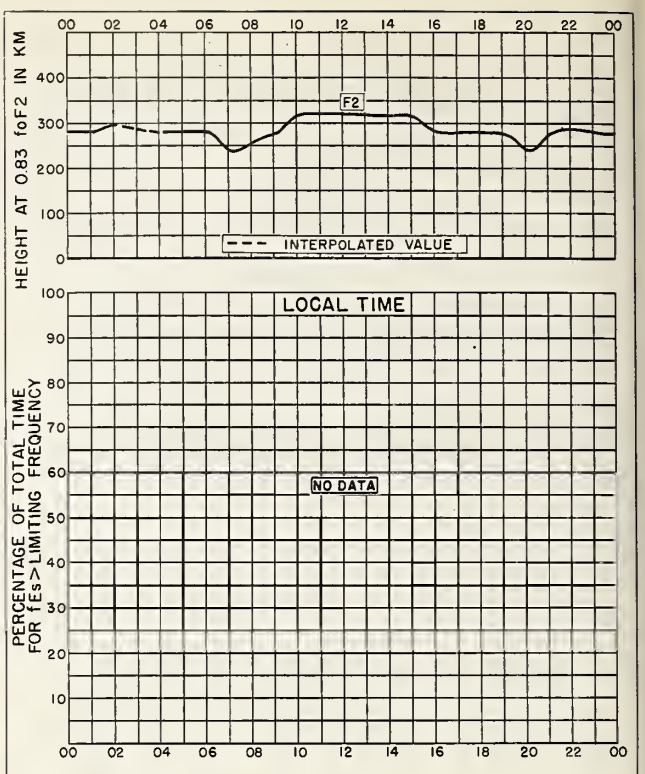


Fig. 98. DELHI, INDIA AUGUST 1955

NBS 490

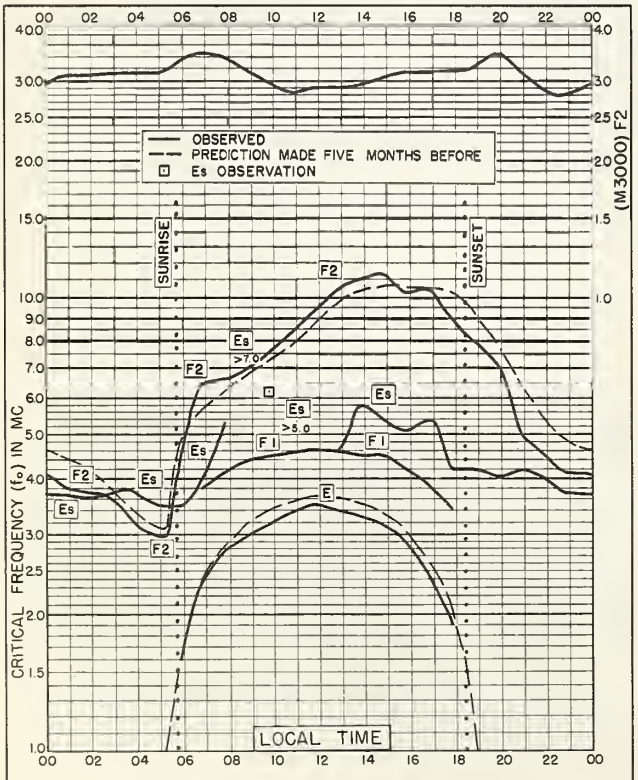


Fig. 99. AHMEDABAD, INDIA
23.0°N, 72.6°E AUGUST 1955

NBS 503

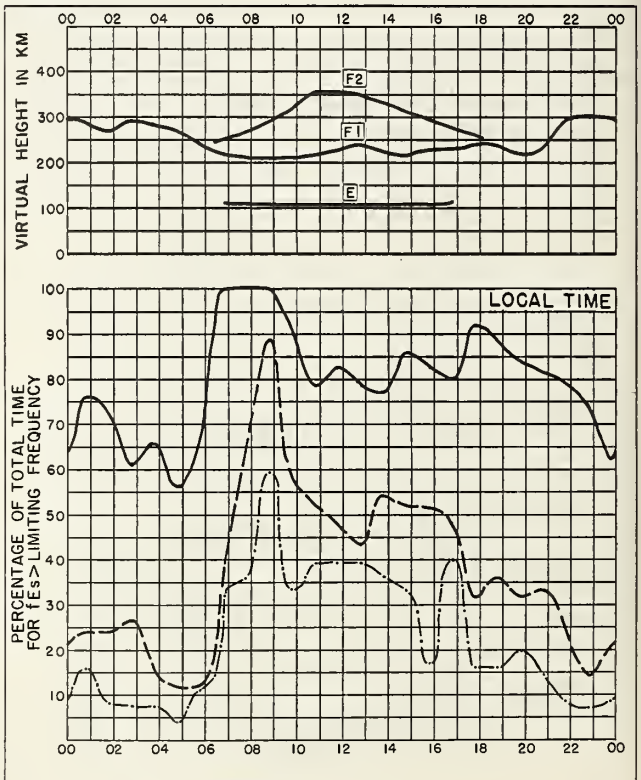


Fig. 100. AHMEDABAD, INDIA AUGUST 1955

NBS 490

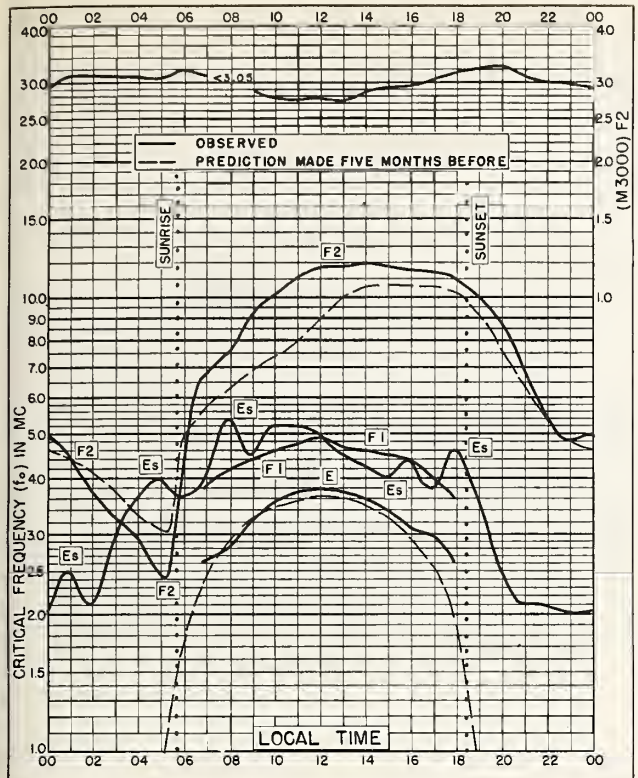


Fig. 101. CALCUTTA, INDIA
22.9°N, 88.5°E AUGUST 1955

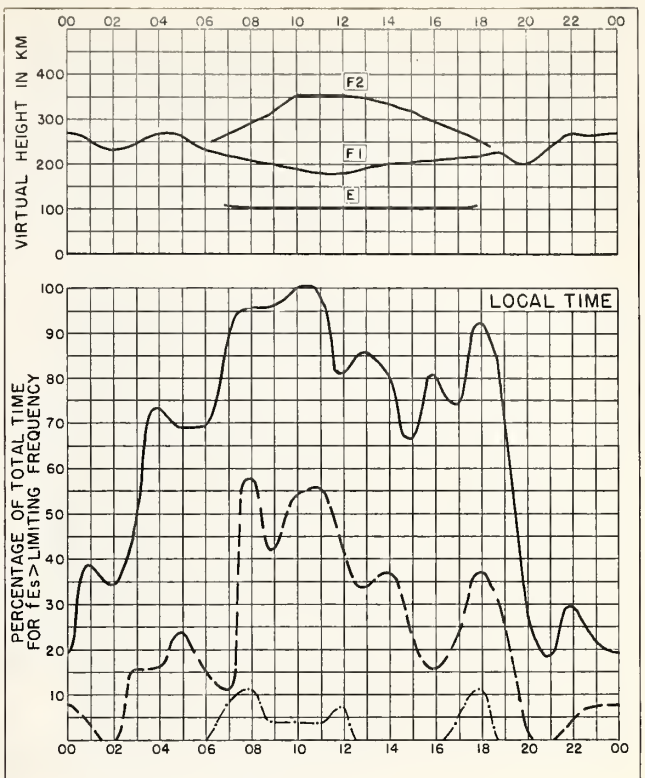


Fig. 102. CALCUTTA, INDIA AUGUST 1955

NBS 490

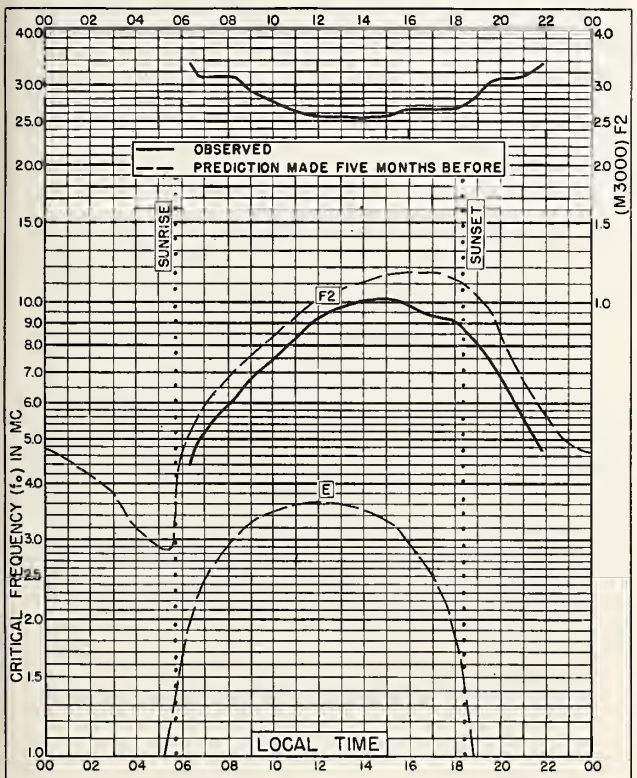


Fig. 103. BOMBAY, INDIA
19.0°N, 73.0°E AUGUST 1955

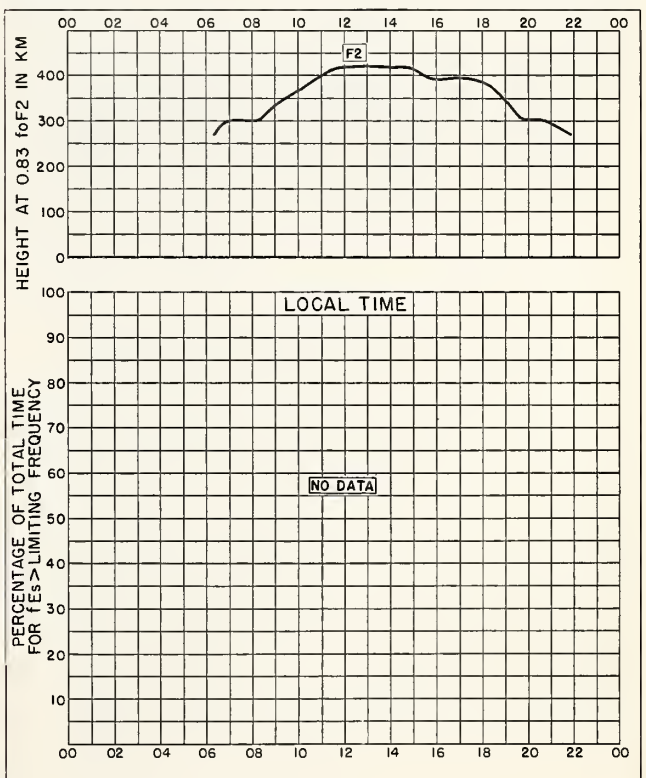


Fig. 104. BOMBAY, INDIA AUGUST 1955

NBS 490

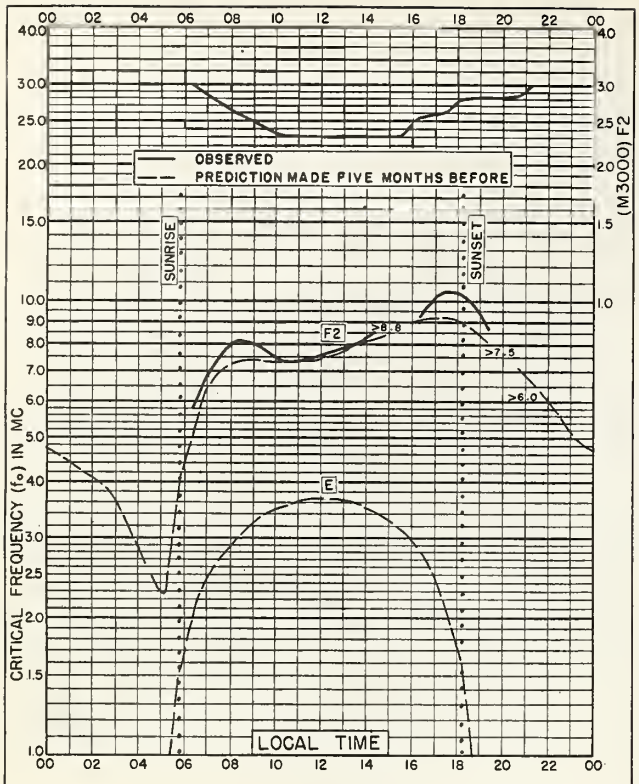


Fig. 105. MADRAS, INDIA
13.0°N, 80.2°E AUGUST 1955

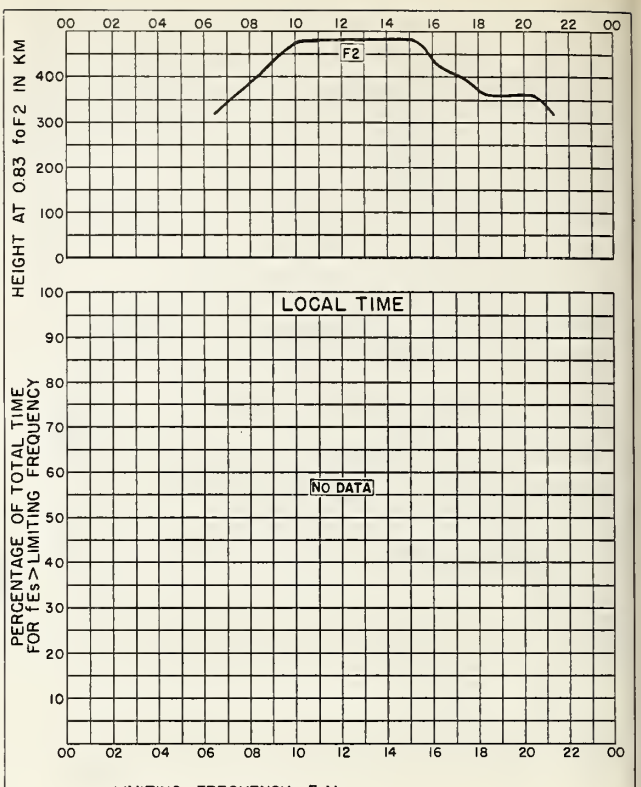


Fig. 106. MADRAS, INDIA AUGUST 1955

NBS 490

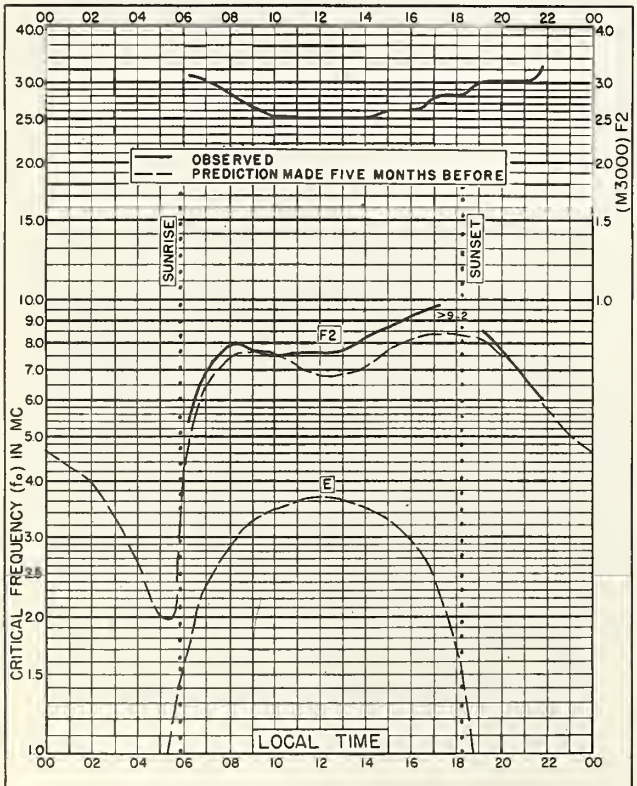


Fig. 107. TIRUCHY, INDIA
10.8°N, 78.8°E AUGUST 1955

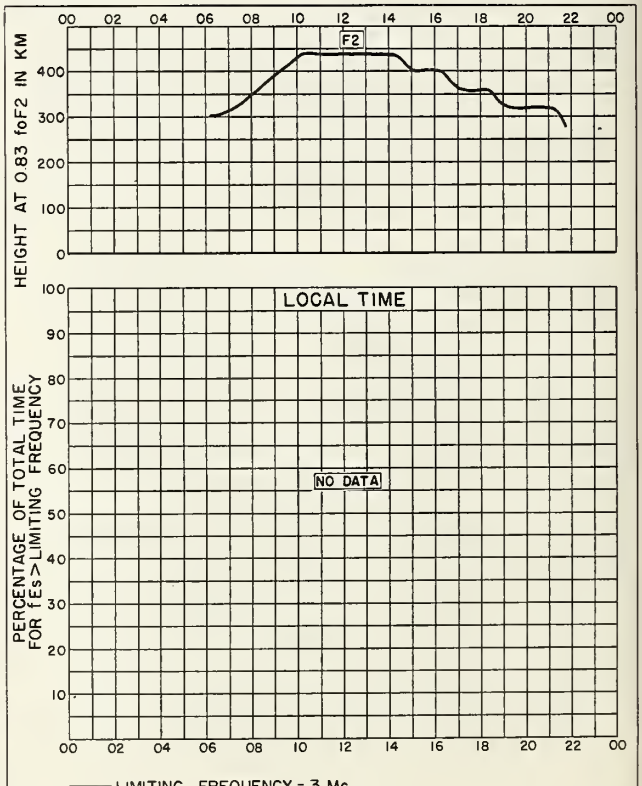


Fig. 108. TIRUCHY, INDIA AUGUST 1955

NBS 490

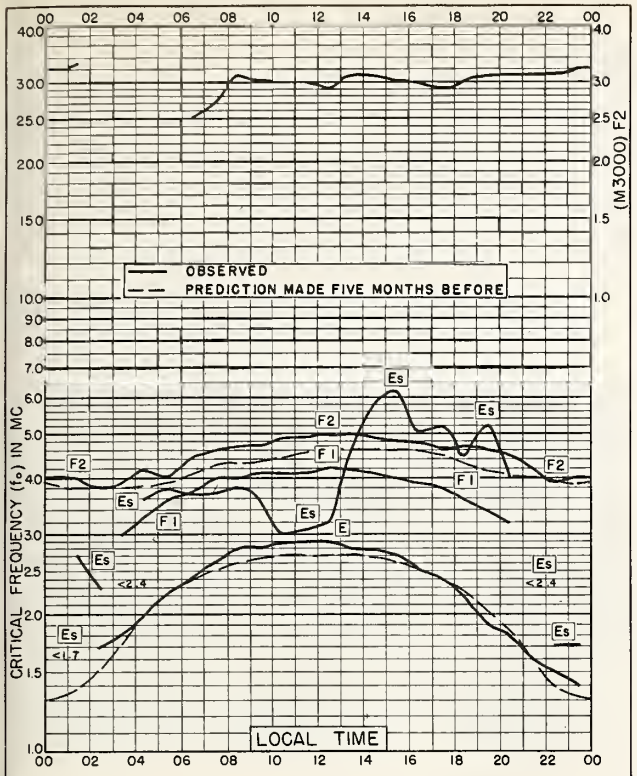


Fig. 109. GODHAVN, GREENLAND
69.2°N, 53.5°W JULY 1955

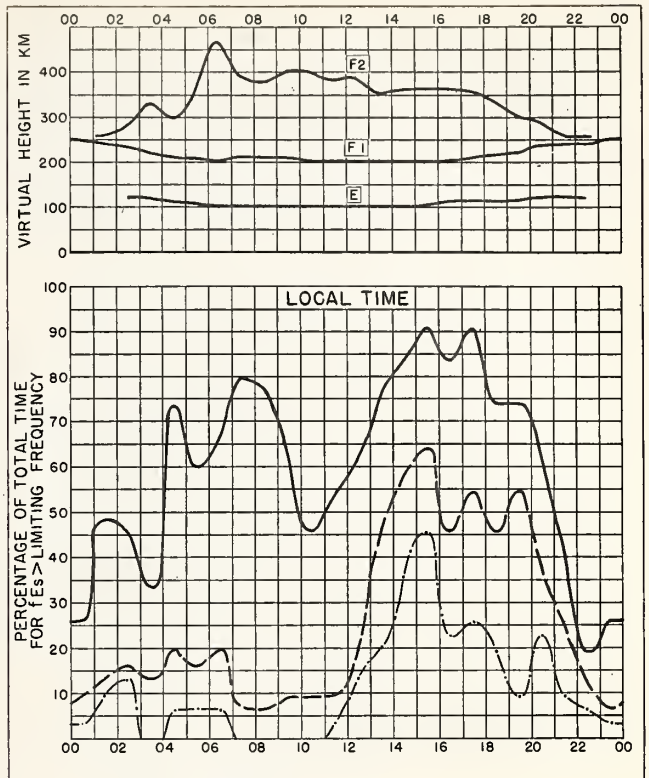


Fig. 110. GODHAVN, GREENLAND JULY 1955

NBS 490

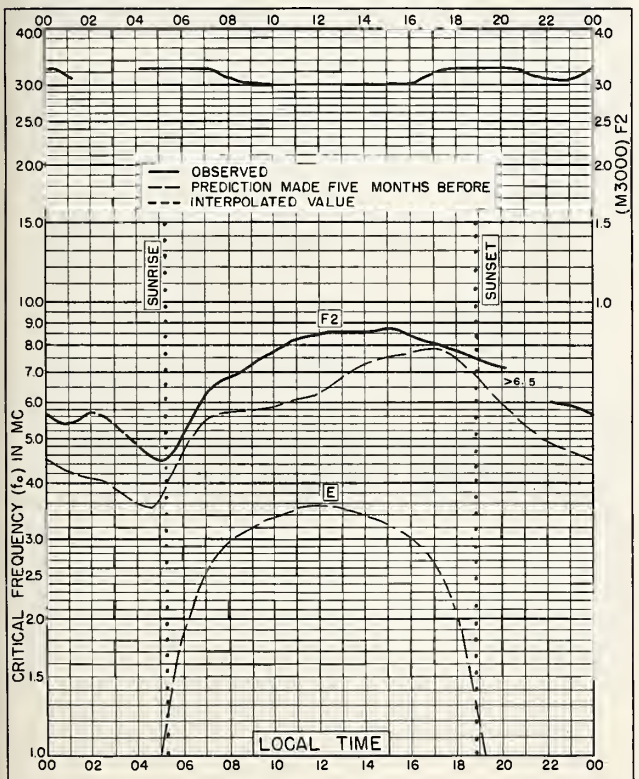


Fig. 111. DELHI, INDIA
28.6°N, 77.1°E JULY 1955

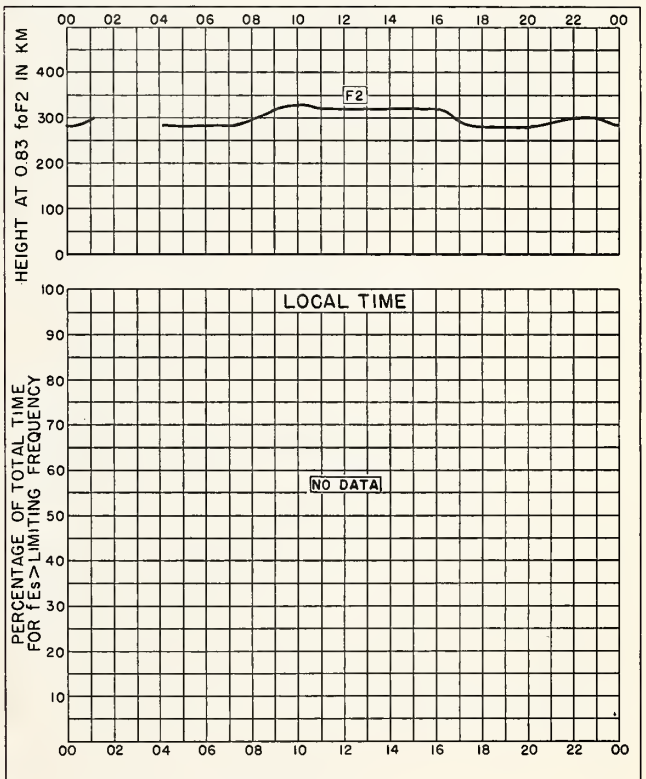


Fig. 112. DELHI, INDIA JULY 1955

NBS 490

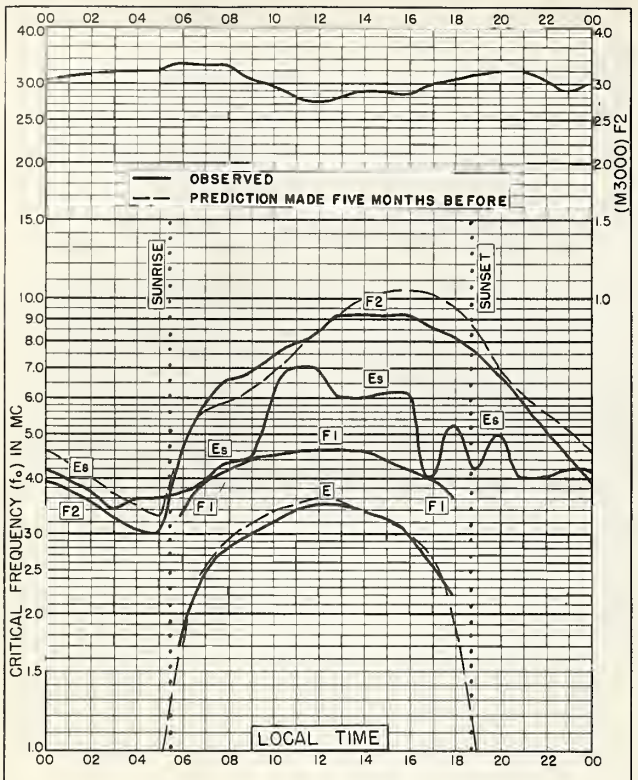


Fig. 113. AHMEDABAD, INDIA
23.0°N, 72.6°E JULY 1955

NBS 503

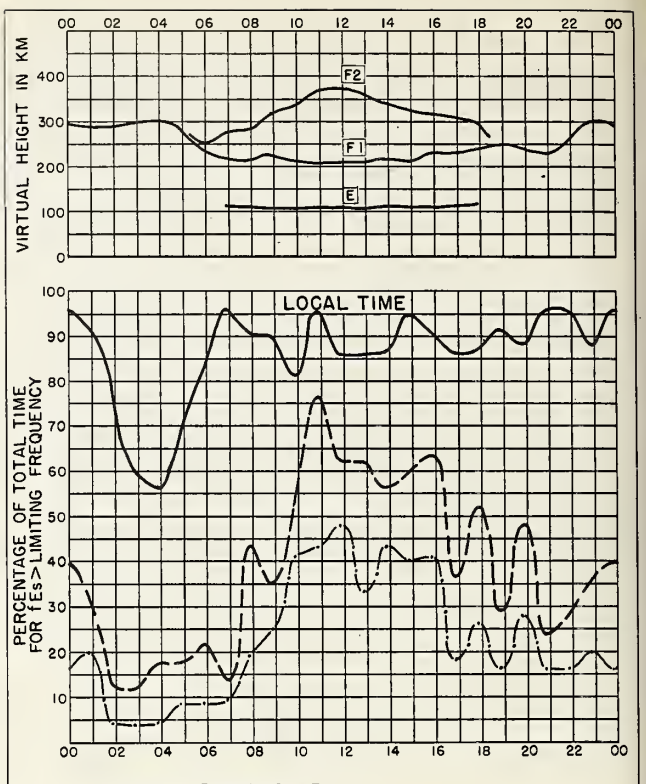


Fig. 114. AHMEDABAD, INDIA. JULY 1955

NBS 490

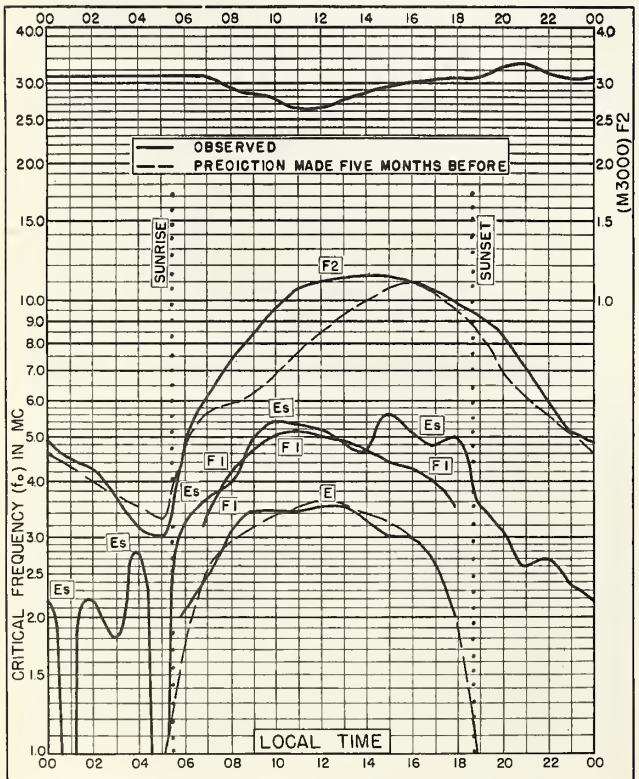


Fig. 115. CALCUTTA, INDIA
22.9°N, 88.5°E JULY 1955

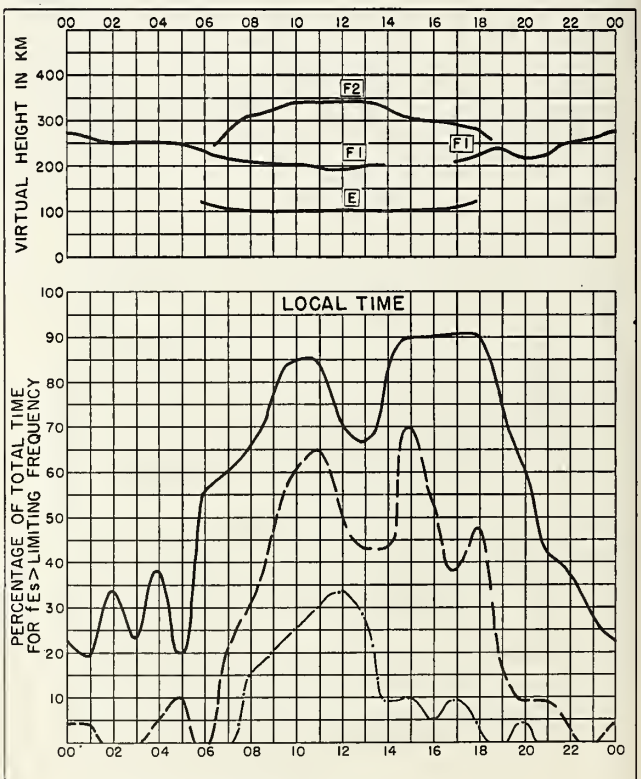


Fig. 116. CALCUTTA, INDIA JULY 1955

NBS 490

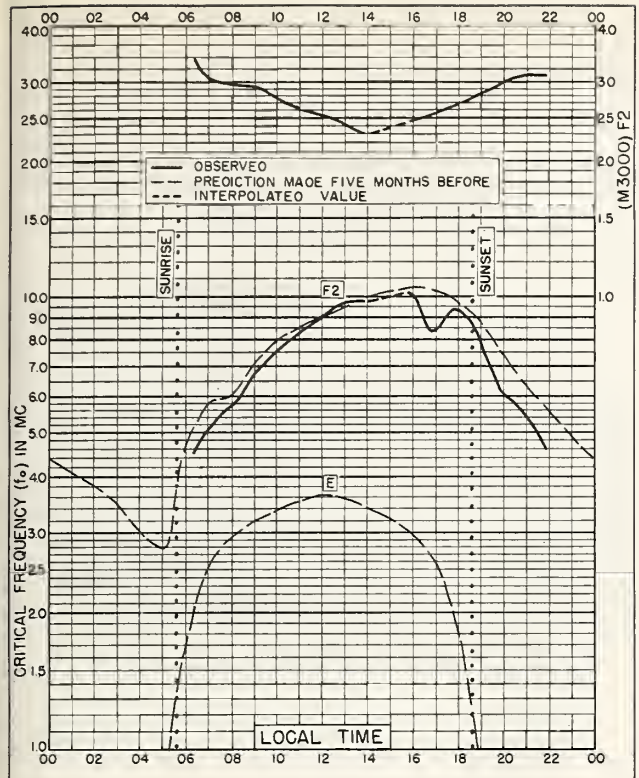


Fig. 117. BOMBAY, INDIA
19.0°N, 73.0°E JULY 1955

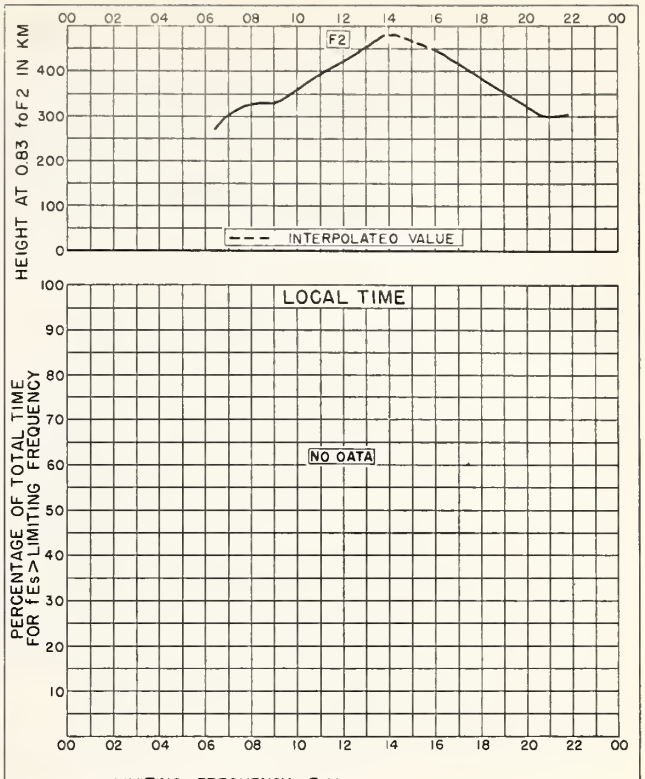


Fig. 118. BOMBAY, INDIA JULY 1955

NBS 490

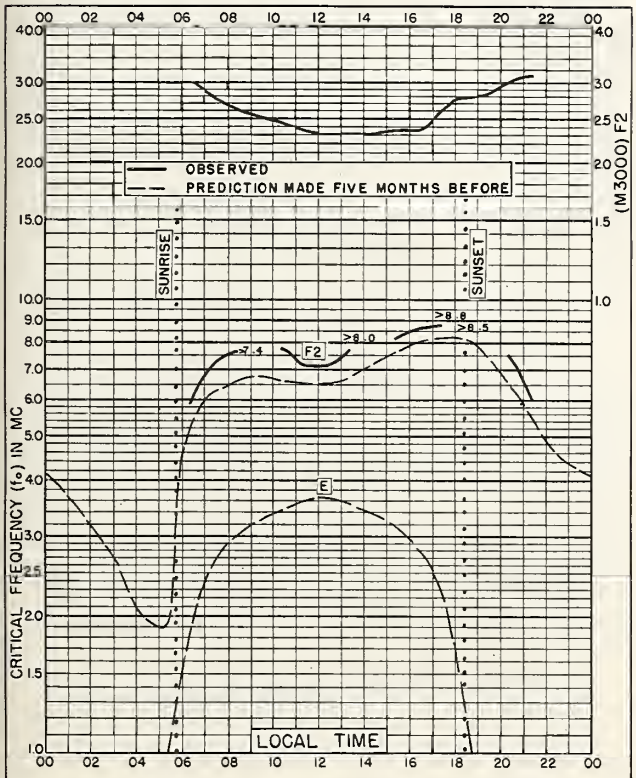


Fig. 119. MADRAS, INDIA
13.0°N, 80.2°E JULY 1955

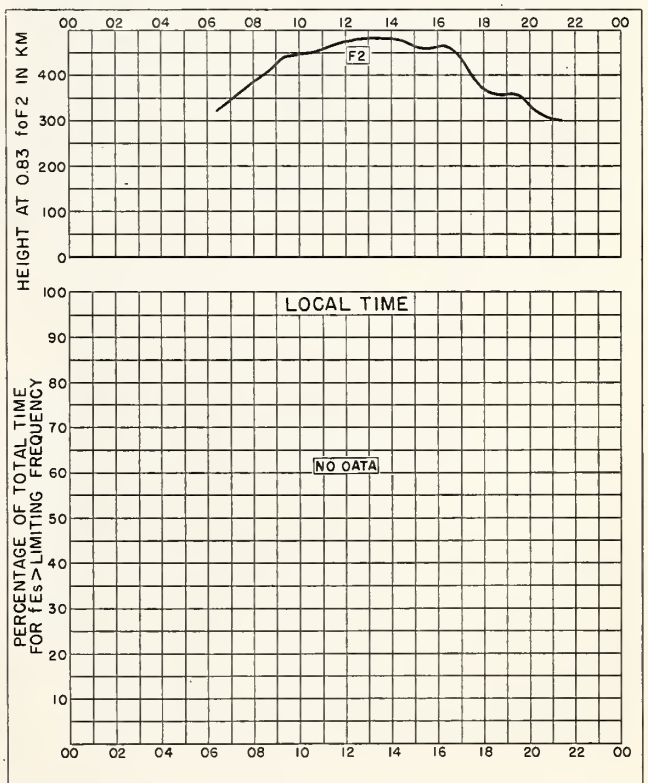


Fig. 120. MADRAS, INDIA JULY 1955

NBS 490

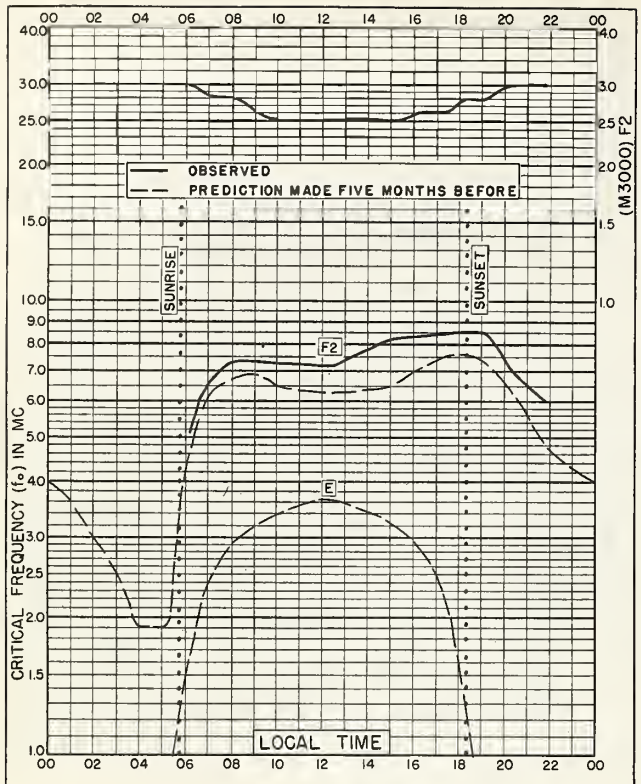


Fig. 121. TIRUCHY, INDIA
10.8°N, 78.8°E JULY 1955

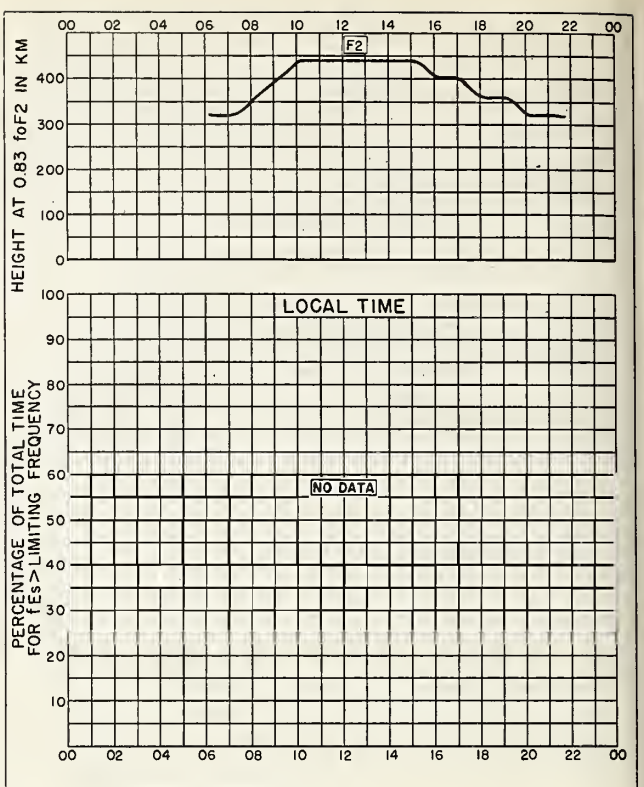


Fig. 122. TIRUCHY, INDIA JULY 1955

NBS 490

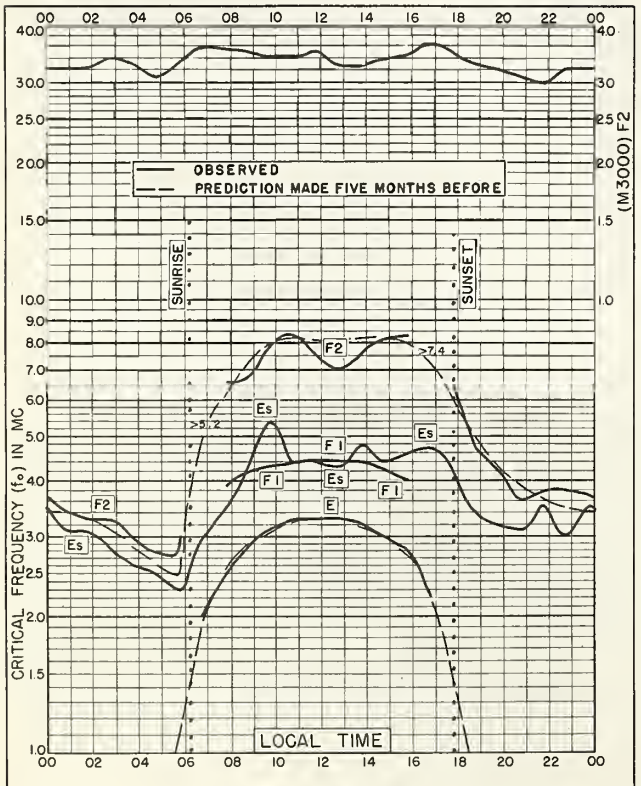


Fig. 123. TOWNSVILLE, AUSTRALIA
19.3°S, 146.7°E APRIL 1955

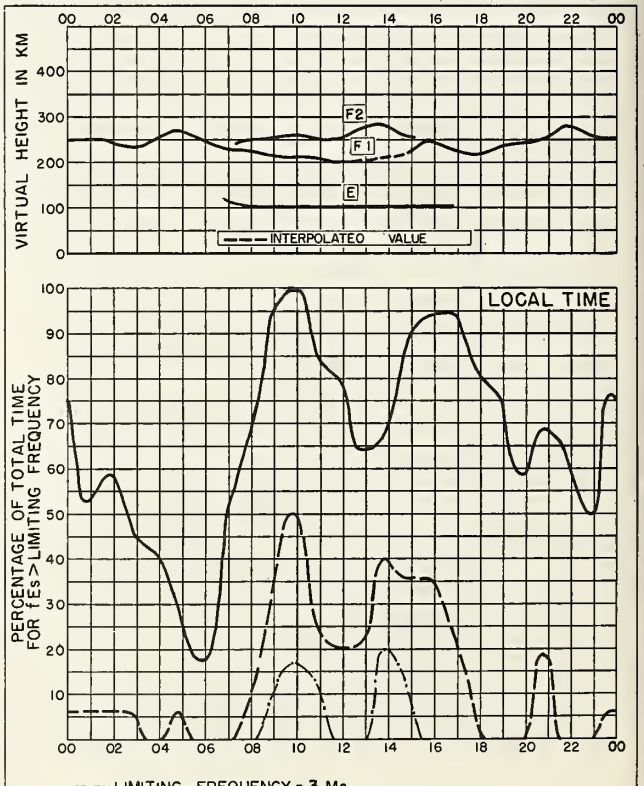


Fig. 124. TOWNSVILLE, AUSTRALIA APRIL 1955

NBS 490

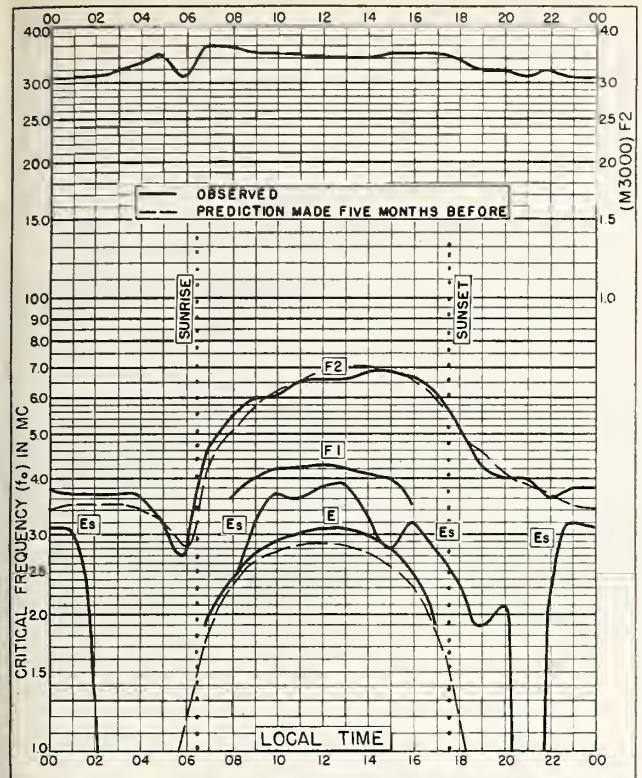


Fig. 125. CANBERRA, AUSTRALIA
35.3°S, 149.0°E APRIL 1955

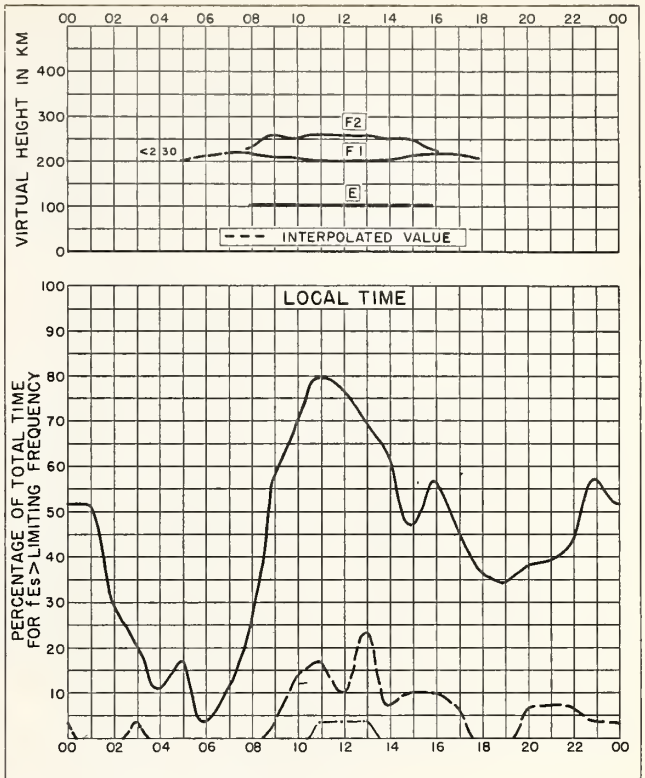


Fig. 126. CANBERRA, AUSTRALIA APRIL 1955

NBS 490

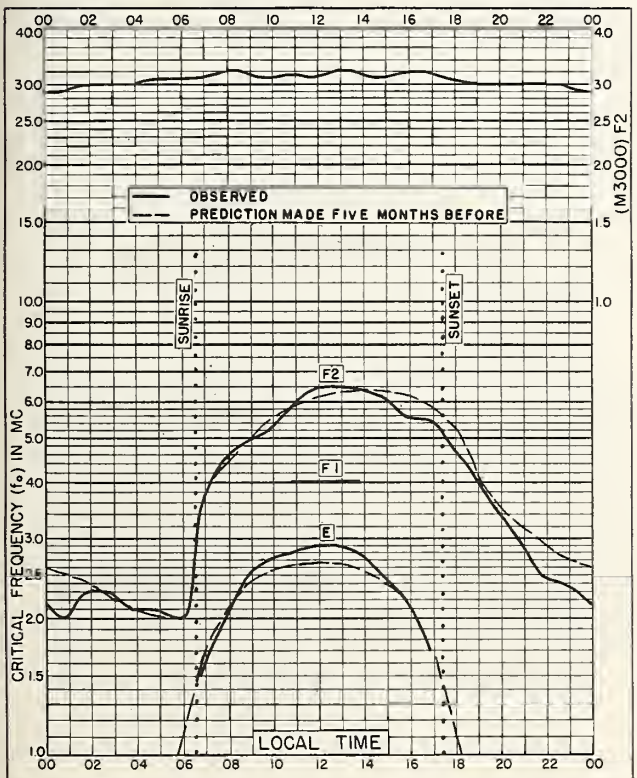


Fig. 127. HOBART, TASMANIA
42.9°S, 147.3°E APRIL 1955

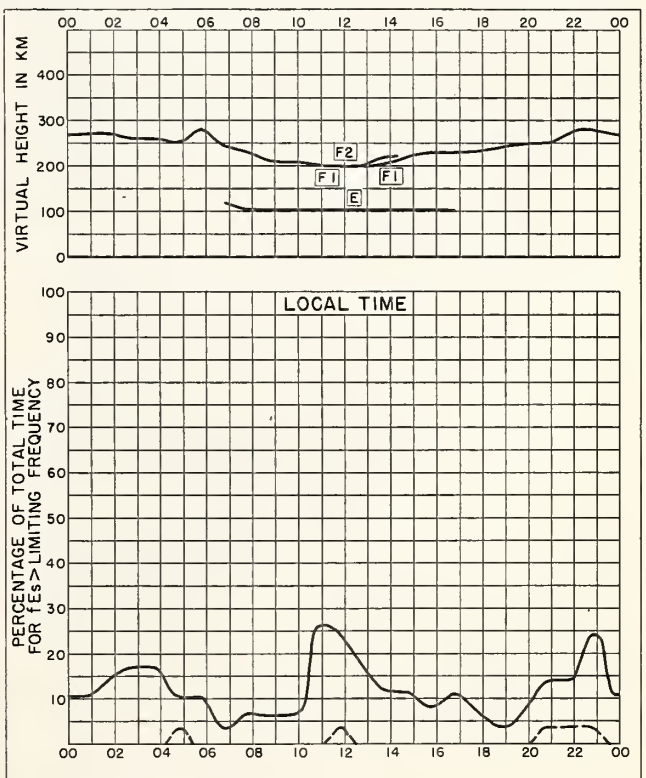


Fig. 128. HOBART, TASMANIA APRIL 1955

NBS 490

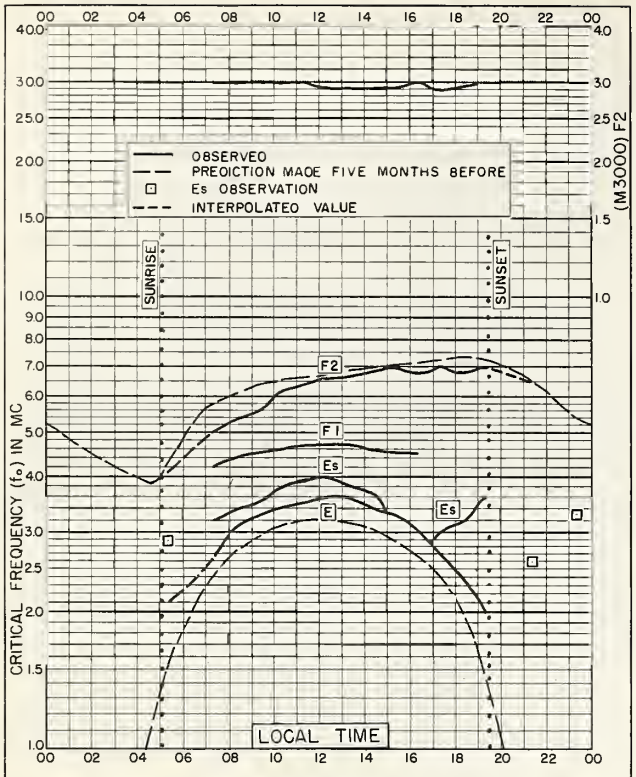


Fig. 129. CAMPBELL I.
52.5°S, 169.2°E FEBRUARY 1951

NBS 503

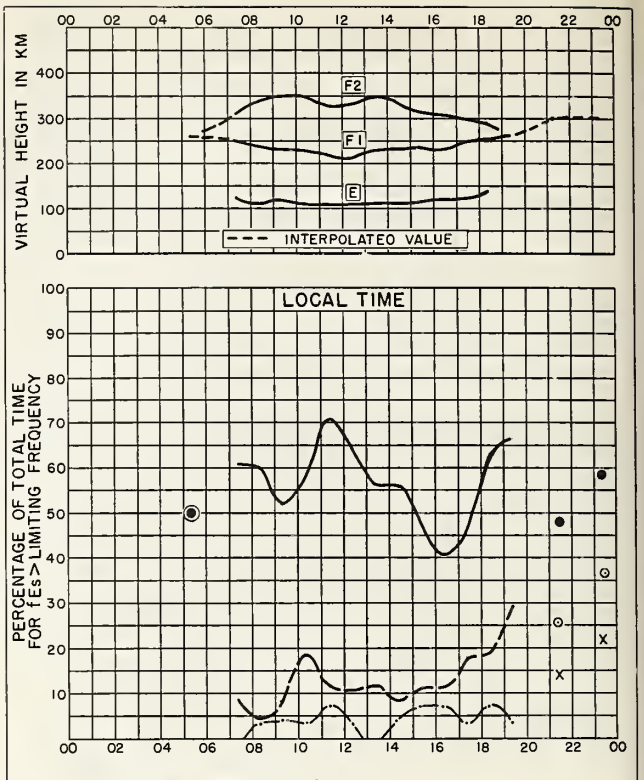


Fig. 130. CAMPBELL I. FEBRUARY 1951

NBS 490

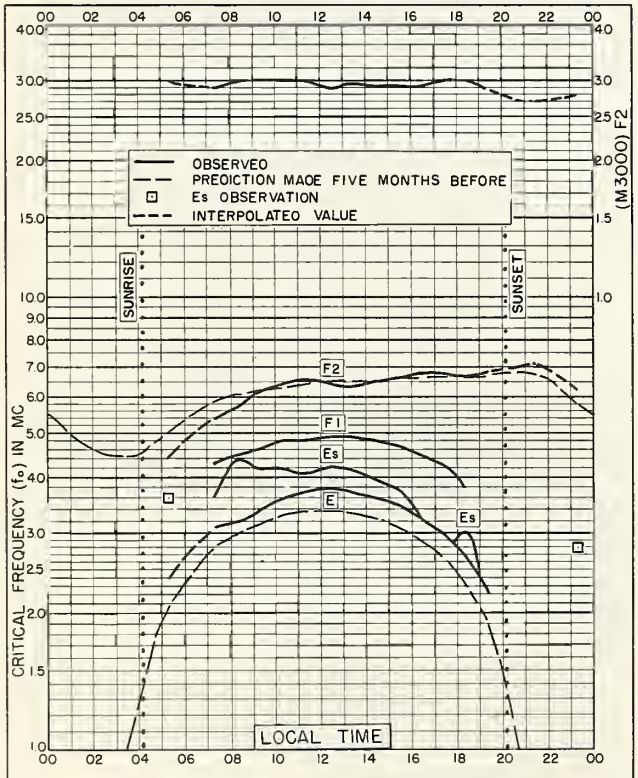


Fig. 131. CAMPBELL I.
52.5°S, 169.2°E JANUARY 1951

NBS 503

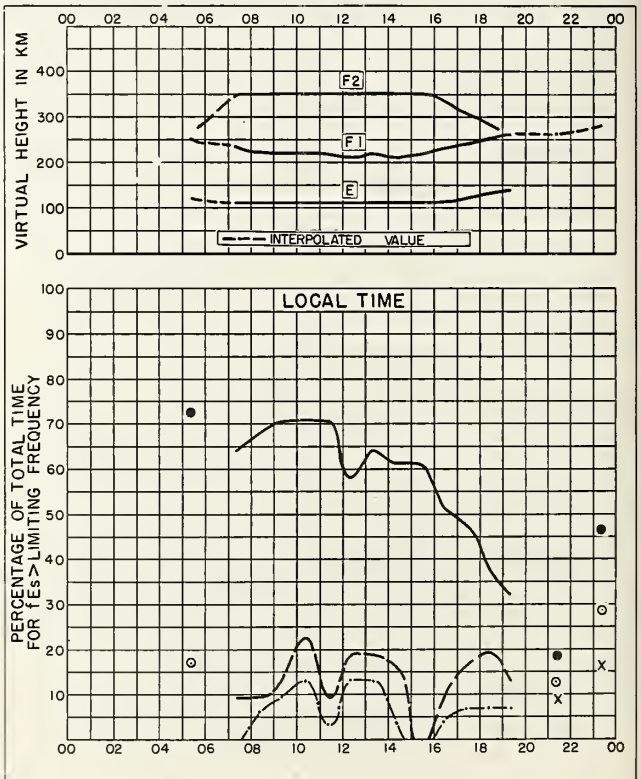


Fig. 132. CAMPBELL I. JANUARY 1951

NBS 490

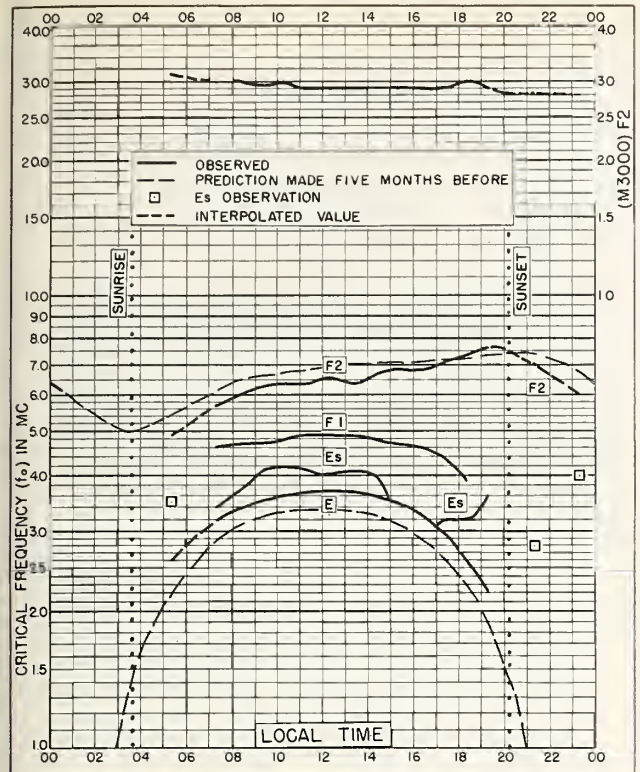


Fig. 133. CAMPBELL I.
52.5°S, 169.2°E DECEMBER 1950

NBS 503

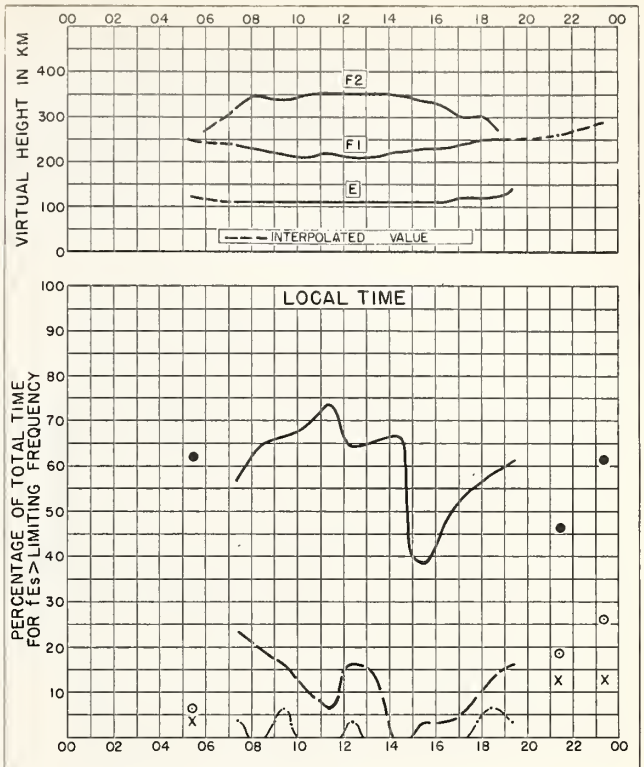


Fig. 134. CAMPBELL I. DECEMBER 1950

NBS 490

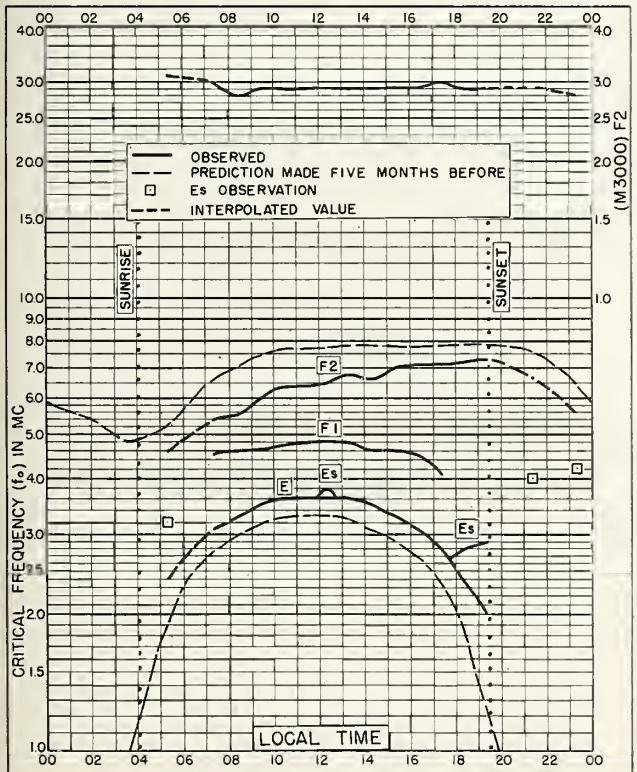


Fig. 135. CAMPBELL I.
52.5°S, 169.2°E NOVEMBER 1950

NBS 503

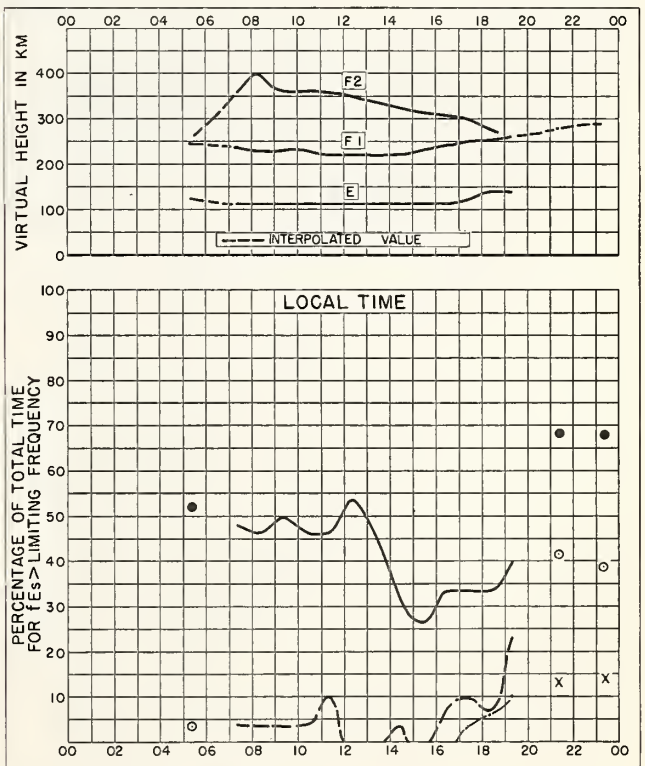


Fig. 136. CAMPBELL I. NOVEMBER 1950

NBS 490

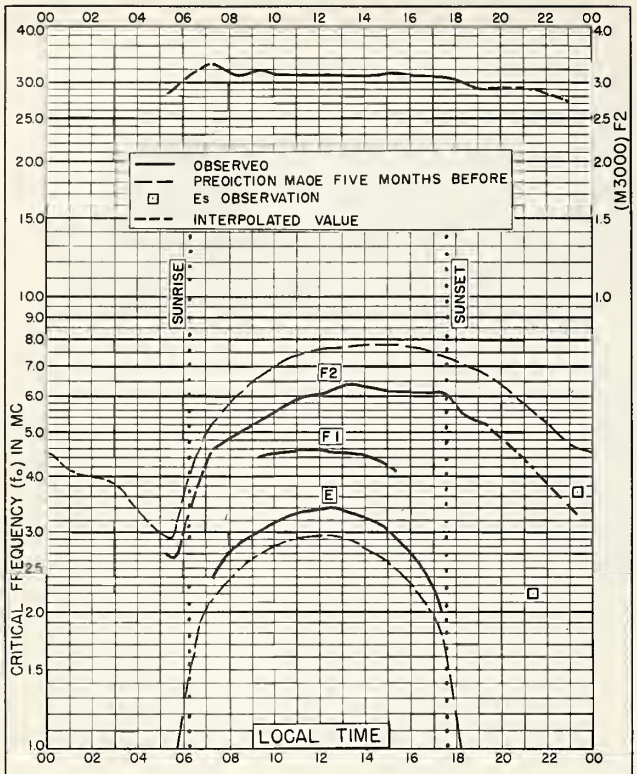


Fig. 137. CAMPBELL I.
52.5°S, 169.2°E SEPTEMBER 1950

NBS 803

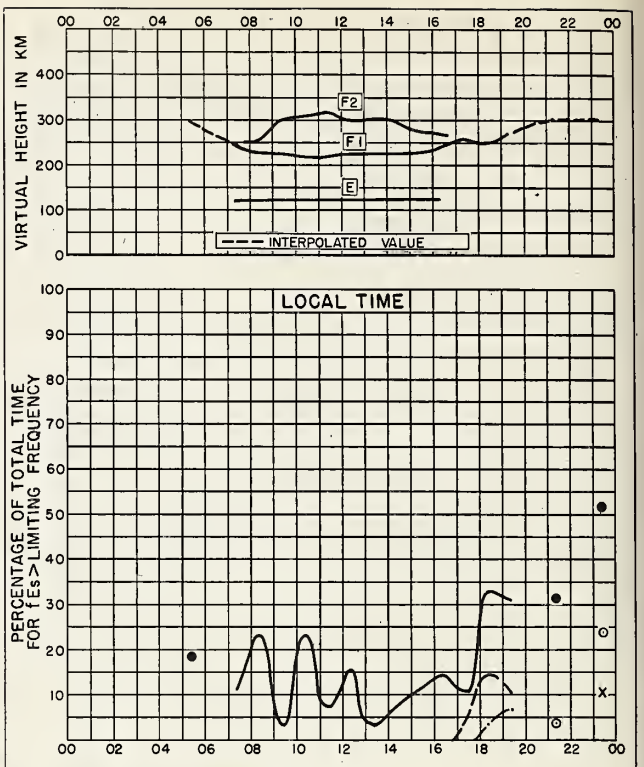


Fig. 138. CAMPBELL I. SEPTEMBER 1950

NBS 490

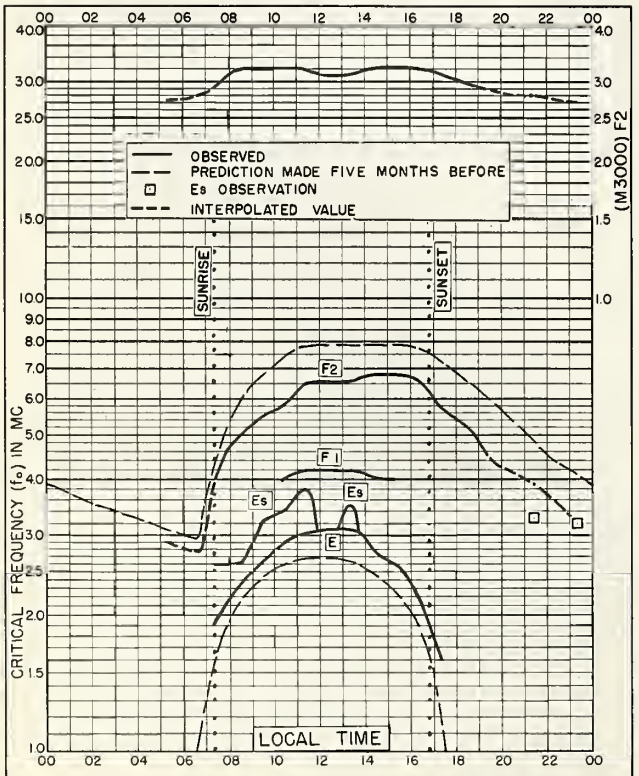


Fig. 139. CAMPBELL I.
52.5°S, 169.2°E AUGUST 1950

NBS 503

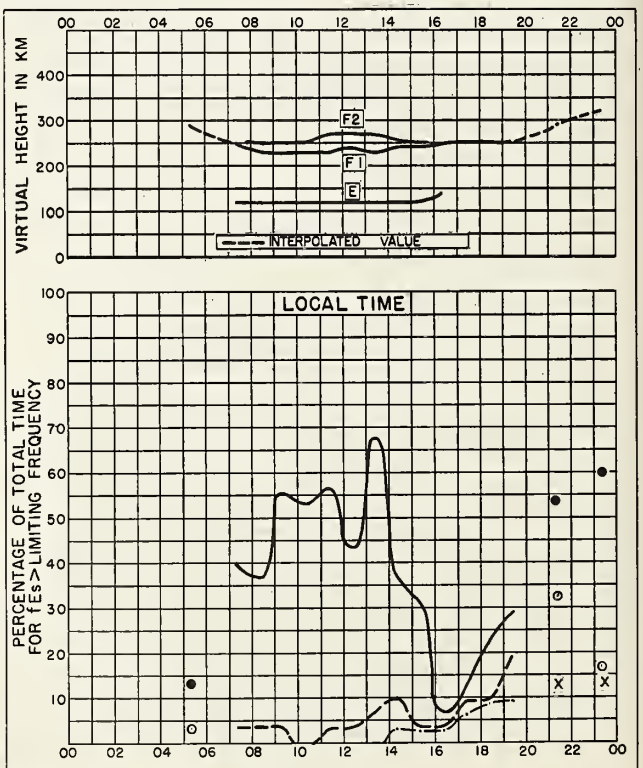


Fig. 140. CAMPBELL I. AUGUST 1950

NBS 490

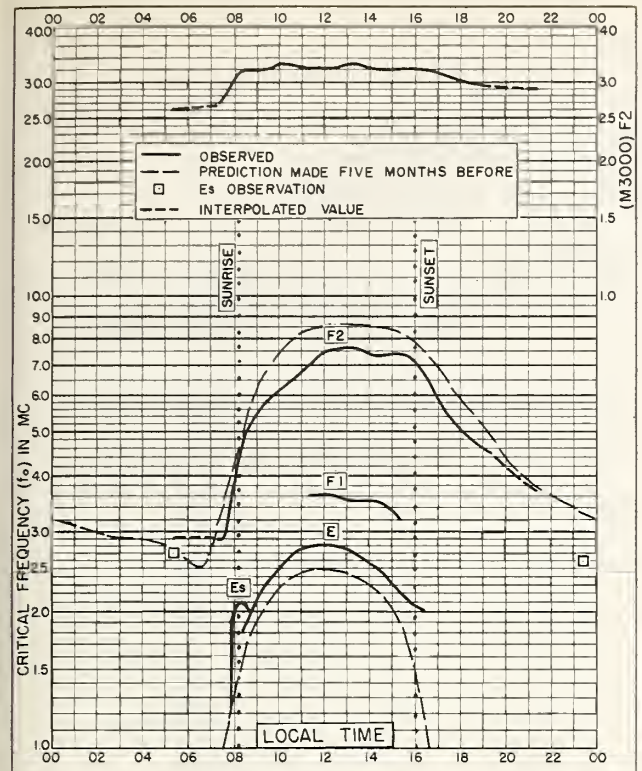


Fig. 141. CAMPBELL I.
52.5°S, 169.2°E JULY 1950

NBS 503

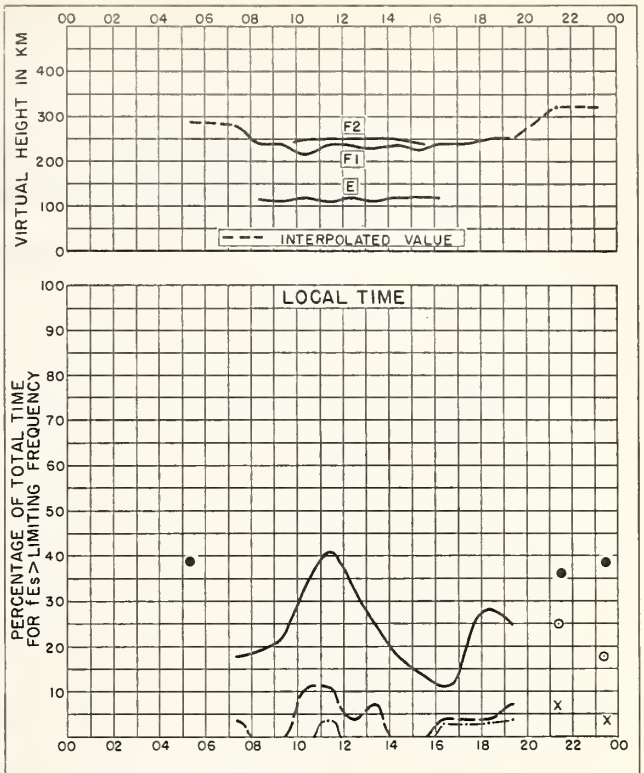


Fig. 142. CAMPBELL I. JULY 1950

NBS 490

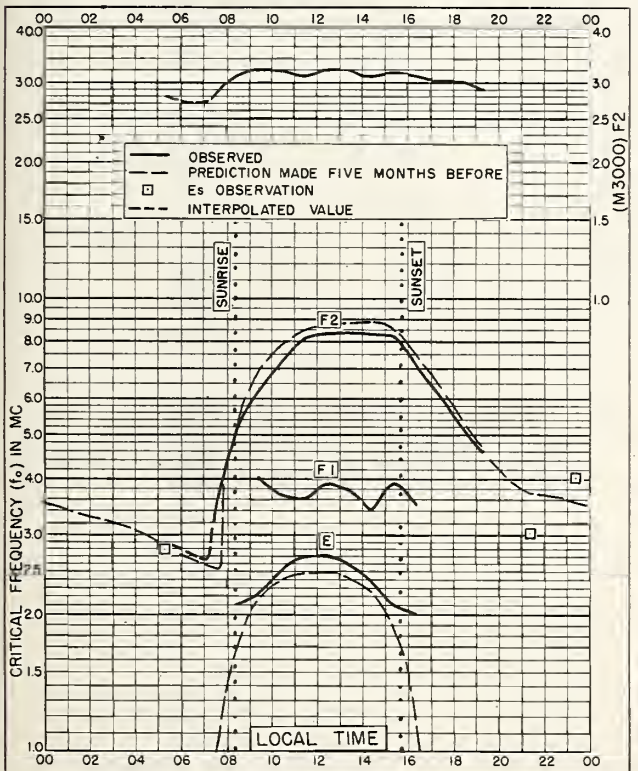


Fig. 143. CAMPBELL I.
52.5°S, 169.2°E JUNE 1950

NBS 503

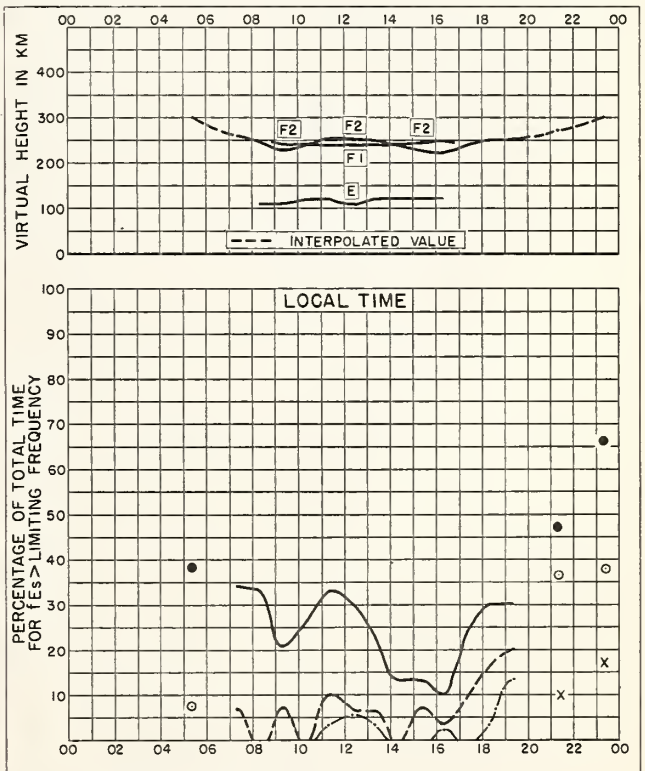


Fig. 144. CAMPBELL I. JUNE 1950

NBS 490

Index of Tables and Graphs of Ionospheric Data in CRPL-F141 (Part A)

Index (CRPL-F141 (Part A), continued)

Index (CRPL-F141 (Part A), concluded)

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